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ABSTRACT

This study analyzes the 1984-1985 Cleveland, Ohio, School District student reading data. The average Cleveland student maintained but did not significantly improve his/her reading achievement position relative to comparable students in a national sample. Average reading comprehension scores of the adversely affected students remained below the 33rd percentile, with the remaining students averaging at about the 50th percentile. Asian and Pacific Islanders scored the highest average test scores of any racial group, with Hispanics and Blacks scoring the lowest. In each racial group, the students with the highest reading scores had the best daily attendance rates. Girls scored higher in reading than boys; however, boys progressed or regressed more dramatically than girls, who tended to maintain their relative positions. The bulk of negative achievement results was attributed primarily to twenty schools. There continues to be a significant drop in average reading scores in the articulation grades, particularly grades 4 and 7. Schools using Project Perform had slightly greater vocabulary and reading comprehension gains than comparison schools. Extensive recommendations are discussed at the end of the study. Appendices making up about half the document compare various groups of students and their reading comprehension. (CG)

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ANALYSIS OF 1984-1985 CLEVELAND SCHOOL DISTRICT STUDENT DATA WITH POLICY AND PLANNING IMPLICATIONS FOR STUDENT READING DISCREPANCIES

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CLEVELAND PUBLIC SCHOOLS
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TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	vi
INTRODUCTION	1
PURPOSE	2
OBJECTIVES	3
REVIEW OF THE LITERATURE	3
Current Trends in Student Achievement	4
Black and White Student Performance Patterns	7
Desegregation Effects on Student Achievement	9
School Improvement and Effective Instruction	11
Staff Development	17
METHOD	19
FINDINGS	21
Introduction	21
Causality	21
General Analysis of Student Data	22
Gain Scores	30
Black-to-White Gain Score Comparisons	31
Racial Comparisons	31
Using Parity Study Criteria for Data Analyses	34
Adversely Affected Group Related Runs	39
Relationship Between Average Daily Attendance Rate and Reading Comprehension Achievement Level	42
Selected Sex Based Differences	48

Page

Various Other Comparisons Between Bottom, Middle, and Top One-Third Reading Comprehension Achievement Student Groups..... 49

Project Perform..... 52

CONCLUSIONS AND RECOMMENDATIONS..... 54

Conclusions..... 54

Recommendations..... 57

TABLES

		Page
Table 1:	The Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Pretest Scores by Race and Grade for the 1984-1985 School Year (with Sample Size).....	25
Table 2:	The Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Posttest Scores by Race and Grade for the 1984-1985 School Year (with Sample Size).....	26
Table 3:	The Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Difference) Scores by Race and Grade for the 1984-1985 School Year (with Sample Size).....	27
Table 4:	Average 1984-1985 CTBS Reading Comprehension NCE Scores (with Number of Students*) by Race.....	35
Table 5:	Number (and Percent)* of Cleveland Public Schools Categorized by Percent of Total Students in School Moving Across 33rd Percentile Cut Score (Positively or Negatively) Who Did So Positively, Grouped by Building Type.....	38
Table 6:	Average Daily Attendance Rates (in Percent) by Race and by CTBS Reading Comprehension Posttest Based Student Achievement Groups (Bottom, Middle, and Top Thirds) in the 1984-1985 Cleveland City Schools.....	46
Table 7:	Average Daily Attendance Rates (in Percent) by Sex and Race Within Reading Comprehension Posttest Based Student Achievement Groups (Bottom, Middle and Top Thirds) in the 1984-1985 Cleveland City Schools.....	47

FIGURES

		Page
Figure 1:	The Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Difference) Scores by Grade Level for the Cleveland Public Schools for the 1984-1985 School Year.....	32
Figure 2:	A Comparison between Black and White Students' Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Difference) Scores in the Cleveland Public Schools for the 1984-1985 School Year.....	33
Figure 3:	A Comparison Between Adversely and Non-Adversely Affected Student Group Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Posttest Scores in the Cleveland Public Schools for the 1984-1985 School Year.....	43
Figure 4:	A Comparison Between Adversely and Non-Adversely Affected Group Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Pretest to Posttest Difference) Scores in the Cleveland Public Schools for the 1984-1985 School Year.....	44

APPENDICES

		Page
Appendix A:	Comparisons of Students Moving from Above to Below the 33rd Percentile with Those Moving from Below to Above by Building Level and Type and by School.....	62
Appendix B:	Comparisons Between Male and Female Students.....	81
Appendix C:	Various Other Comparisons Between Bottom, Middle and Top One-Third Reading Comprehension Achievement Student Groups.....	107

EXECUTIVE SUMMARY

Analysis of 1984-1985 Cleveland School District Student Data with Policy and Planning Implications for Student Reading Discrepancies

S. James Zafirau

PURPOSE

The purpose of this study was to analyze and interpret 1984-1985 district-wide reading data so that accurate and usable information and recommendations would be available for the planning, curriculum design, and implementation functions of the district.

FINDINGS

1. The average student in the Cleveland City Schools maintained but did not significantly improve his/her reading achievement position relative to comparable students in a national sample.

2. The average reading comprehension score of the adversely affected students remained below the 33rd percentile, with the remaining students again averaging at about the 50th percentile.

3. The Asian and Pacific Islander racial group scored the highest average pretest, posttest and gain score of any racial group, with the Hispanics and blacks scoring the lowest. Whites progressed better than blacks at the elementary level, but blacks better than whites at the secondary level.

4. It was again true for each racial group that those having better reading comprehension achievement scores also had a higher average daily attendance rate.

5. In general, girls scored higher in reading comprehension than boys. However, boys tended to either progress or regress more dramatically during the year in contrast to girls who tended to simply maintain their relative position in reading comprehension. There were also proportionately more boys in the adversely affected group.

6. The bulk of the slightly negative reading comprehension achievement results for the school district can be attributed primarily to twenty schools. For every two students (in each of these twenty schools) who moved from below to above the 33rd percentile in reading, there were more than three students who moved across the 33rd percentile in a negative direction.

7. There continues to be a significant drop in average reading scores in the articulation grades--particularly grades 4 and 7.

8. The bottom one-third reading group had a significantly greater proportion of adversely affected students, as well as black and Hispanic students.

9. The Collinwood and Kennedy-Marshall Clusters were the only clusters having a greater proportion of their students placing in the top one-third group than in the bottom one-third.

10. Reading vocabulary gains as well as reading comprehension gains were somewhat greater in Project Perform schools than in the comparisons schools.

RECOMMENDATIONS

1. Increased effectiveness of reading achievement related articulation programs should be developed and implemented, especially in grades four and seven.

2. More effective strategies for reducing the non-promotion rate (especially in the early grades), dropout rate, and student absenteeism should be identified, implemented and evaluated at the building level.

3. Programs which accommodate Hispanic cultural and language heritage as well as educate for entry of Hispanics into the occupational mainstream should be created, implemented and evaluated at district, cluster, and building levels.

4. More effective ways of accelerating the academic achievement (especially in reading) of the adversely affected students must be identified, developed, implemented, and evaluated at the building level.

5. The twenty schools identified as having the most deficient student reading progress should be earmarked for supervisory and administrative attention, assistance and corrective action.

6. Strategies for identifying programs which will effectively challenge average and above average/gifted students to excel should be jointly identified, developed, implemented and evaluated by staff at the district, cluster and building levels.

7. Wholistic strategies for increasing the effectiveness of schools (such as used in Project Perform) should be seriously considered for use in additional schools.

8. The Division of Testing and Evaluation, in consultation with user and consumer groups, should continually review and evaluate all tests used citywide in terms of the broad range of validity, reliability, and practical/utility issues.

INTRODUCTION

This report replicates, with some revisions, analysis models used in two previous studies conducted by the Cleveland School District. The first report, A Study of Discrepant Reading Achievement of Minority and White Students in a Desegregating School District, presented findings from analyses completed between March, 1982 and February, 1983, utilizing a data base from the 1980-1981 school year. The second report, Analysis of 1982-1983 Cleveland School District Data with Policy and Planning Implications for Student Reading Discrepancies and Attendance. Part I: Discrepant Reading Issues Study also examined characteristics of Cleveland's schools and students with respect to reading performance. This second study updated the data base to the 1982-83 school year as it considered reading discrepancy issues, the status of reading achievement parity between racial groups, and progress of students identified as being adversely affected by previous segregation in the Cleveland schools. This third report, using 1984-1985 data, will present analyses of student-based data, either replicating and/or refining previous analyses, from three perspectives--reading discrepancy, parity, and adversely affected populations. A discussion of the causality issue will also be presented.

At this point in the history of the Cleveland School District, desegregation has been implemented in all schools since September, 1980. Average daily membership and racial distribution data for the school district for the three school years of 1980-1981, 1982-1983, and 1984-1985, which are the data bases for the three mentioned reports, show:

School Year	Average Daily Membership	Percentages				
		Black	White	Hispanic	Asian	American Indian
1980-1981	83,488.50	66.9	28.3	3.9	.6	.3
1982-1983	77,233.70	68.3	26.5	4.1	.9	.3
1984-1985	74,134.52	68.9	25.5	4.4	1.0	.3

The Remedial Order stipulated that the school district conduct a study to determine the nature and extent of disparities in the reading test scores of minority and white pupils in the Cleveland Public Schools at the elementary, junior high, and senior high school levels. The Court concluded that evidence presented demonstrated that the percentage of students in Cleveland reading below average increased as the percentage of black students in particular schools increased. Subsequent recommendations of the Office on School Monitoring and Community Relations (OSMCR) have called for district studies of changes and parity in reading performance and of attendance patterns as well. This effort attempts to comply with these requests.

PURPOSE

The purpose of this study is to analyze and interpret 1984-1985 district-wide reading data so that accurate and useable information is available for the planning, curriculum design, and implementation functions of the district.

OBJECTIVES

The objectives of this study include:

1. To determine whether or not the models of analysis applied in the previous study of reading discrepancy produce comparable results;

2. To compare the differences between black and white students in reading comprehension and their pervasiveness throughout the school system as evidenced by the current and previous data base;

3. To identify and contrast those student groups (adversely and non-adversely affected) whose relative reading comprehension scores have increased the most with those students whose relative reading comprehension scores have declined the most in terms of such student indicators as race, sex, reading comprehension and vocabulary pre-test scores, and attendance rates.

REVIEW OF THE LITERATURE

The purposes of this literature review are to provide a context for interpreting study results and to identify promising strategies for improvement of student achievement in the Cleveland schools.

This review utilizes sources from the educational Resources Information Center (ERIC) from 1981 to the present. A computerized search of ERIC has produced more than 35,000 studies of achievement during this period with over 1,000 studies focusing on the effects of desegregation on achievement. The search has located four studies specifically addressing desegregation effects on black and white student achievement. The massiveness of the achievement literature dictates a selective approach in identifying relevant materials for this review. Although the specific focus of this effort is black and white achievement, additional areas of

the literature are potentially useful. These materials address what should be done for school improvement and can guide future directions in the school district. The review, therefore, draws examples from the literature related to the following topics:

- current trends in student achievement;
- black and white student performance patterns;
- desegregation effects on student achievement;
- school improvement and effective instruction; and
- staff development

Current Trends in Student Achievement

The National Assessment of Educational Progress (NAEP) provides the most representative indicator of stability or change in student achievement in the nation's schools. Holmes (1983), in a comparison of achievement trends in reading, science, and mathematics for 4th, 8th, and 11th grade students, concludes that while overall performance in mathematics and science declined, reading performance remained stable. Students in the lowest performance quartiles realized greater gains than did those in the highest quartiles. Although black students in both the lowest and highest quartiles showed more improvement in reading and mathematics than their white counterparts, all highest quartile 17-year-olds suffered (1983) substantial losses in mathematics and science.

The NAEP (1983), in identifying differences in performance trends in their data during the 1970's, reports that blacks were more likely than whites to show gains, though overall performance of blacks remains below that of their white counterparts. To shed further light on these findings, NAEP's panel of experts in education and social trends convened to consider these results and observed that compensatory education flourished during the 1970's; support for science dwindled; mathematics didn't get the support that reading did; mathematics and science teachers were in short supply; high school graduation requirements in both mathematics and science were eased; and the popular "back to basics" movement focused on lower level skills, perhaps at the expense of challenging more able learners.

Such trends in NAEP results over the past decade prompt conclusions by Brown (1982) in his linking of findings with policy questions that the nation's report card on educational status shows most students' passing lower level "basic" reading and writing skills and slipping in performance on higher order more complex tasks. He observes that federal programs targeted toward disadvantaged populations have been beneficial and that additional work may be needed to prepare students for the increasingly technological world of the future. Additionally, he proposes that more homework and time on trouble spots in complex writing and problem-solving might bolster youngsters' achievement.

Another significant indicator of achievement, the Scholastic Aptitude Test (SAT), shows both 1981-1982 verbal and mathematics scores for the nation's college-bound high school seniors rising over the previous year. This trend reverses a 19-year SAT score decline. The

College Board (1982) concludes that this improvement, combined with 1980-1981 results holding steady from the previous year, signals that serious efforts by the nation's schools and their students to improve the quality of education are taking effect. College-bound seniors who took the SAT in 1982-1983 registered continued improvement in their average scores on the SAT mathematics section. Scores on the verbal sections, however, fell for the first time since 1980. The College Board analysis attributes the rise in the SAT math average to the improved performance by women. It suggests that the rise coincides with increases in the amount of math that women report taking in high school and parallels their increasing interest in careers in such fields as business and computer science.

At this point, consideration of the criticism of the use of SAT results as the barometer of achievement in the schools appears germane to this discussion. Taylor (1984) cautions in testimony to the House Subcommittee on Elementary, Secondary, and Vocational Education that the SAT measures experiences, both in and out of school, and is sensitive to a variety of social and economic factors. He cites that only about one-third of the number of high school graduates participate, which situation tells nothing whatsoever about the rest of the students, and the variety of educational programs in schools, districts, and states across the nation. Because the SAT does not sample all students representatively in the manner of the NAEP, Taylor dismisses the SAT results as barometers of student achievement. He adds that conclusions of the Wirtz Panel which was convened to investigate reasons for the decline of SAT scores during the 1960's and 1970's state that the majority of the score decline was attributable to the significant increase in the number of test takers.

Black and White Student Performance Patterns

While black and white student performance patterns typically receive peripheral emphasis in achievement trends literature, these patterns provide the specific focus in other recent investigations. Burton and Jones (1982) report that their review of several indicators of educational achievement of black and white youth show that differences are decreasing between black and white students, not only in levels of participation in education, but also in measures of outcomes in a variety of learning areas. Using data from the NAEP, they conclude that discrepancy in average achievement levels between black and white youth have become smaller at ages 9 and 13 in five areas: reading, writing, mathematics, science, and social studies. They find where achievement for white students declined, black students' achievement declined less. Where whites have improved, blacks have improved more.

Results reported by NAEP (1983) for 1982 confirm a continuation of the trend identified by Burton and Jones. Black and Hispanic students at each age (9, 13, and 17) show greater progress than their white counterparts according to the test results. In the 46,000 pupil sample, students at all three age groups from heavily minority schools reflect more improvement than those from predominantly white schools.

In a comparison of black and white students scores on several measures of academic achievement [NAEP, SAT, and Graduate Record Examination (GRE)], Jones (1983) reports a significant narrowing of the gap between average scores of both groups. Jones contends that the trend is sufficiently strong and consistent to anticipate further gains in future years for average scores of black students. He is less clear about

the reasons for the changes, whether they are the results of educational or social programs or a long-term effect of school desegregation. Despite the changes, he notes the test scores of black youths are still substantially lower than those of whites in many academic areas, including mathematics.

Cross-cultural studies provide additional dimensions for understanding and eliminating the black-white school performance gap. Ogbu (1978) draws upon studies of minorities in five countries--Britain, New Zealand, India, Japan, and Israel--for a more precise delineation of the barriers to blacks in the American social system than would be possible without such comparisons. Lower school performance, in his opinion, is not itself the central problem but an expression of a more fundamental one, namely caste barriers and ideologies that support them. He contends that school reform must have as its goals, elimination of obvious and subtle ways by which blacks are prevented from receiving the kind of education that would enable them to play a constructive, competitive, and contributory adult role in the economy and society. His reform proposals include strengthening the curriculum so that children will be taught early the necessary skills they need to function adequately in adult life; improving understanding of teachers and counselors of the needs of black children; improving their attitudes and behavior toward these children; increasing parent participation in the educational process itself; equalizing resources of urban and suburban schools and of black and white schools; increasing black school personnel at all levels of the education system; and eliminating subtle ways in testing, classification, tracking, and disciplinary techniques that effectively operate against blacks.

Desegregation Effects on Student Achievement

The major question driving the more than 100 studies of test performance after desegregation is: What is the effect of desegregation on achievement of black students? Crain and Mahard (1978) in their review of this literature answer that sometimes it works and sometimes it doesn't. They observe that many complicating factors make it difficult to determine exactly why desegregation has beneficial achievement effects when it does, and why it sometimes fails to produce these effects. Desegregation is most successful in raising achievement, in their opinion, when it results in one or more of five favorable conditions: transfer of black students to schools with better facilities and better teaching; higher expectations for blacks in their new schools; new curricula and inservice preparation for teachers; peer influences characterized by higher-status, college-bound classmates with better study habits and less rebellious attitudes toward school; and discovery by black students that they can cope, both socially and academically, in their new environment. Crain and Mahard pose many unanswered questions which they view as critical to understanding the effects of desegregation on black achievement. These questions address the optimal racial composition of a desegregated school, the impact of desegregation overtime, the cumulative effects of achievement changes, and impact of white and black student socio-economic status on desegregation.

Wilson (1979) studies effects of integration and class on black educational attainment contrasting the educational attainment process for blacks in segregated and integrated schools. Both positive and negative processes are embedded within integrated and segregated school settings,

but a class split within the black population which exists independently of integration or segregation appears to produce ill effects for lower class black educational attainment. Wilson claims he finds no evidence for any similar split in the white sample.

Crain and Mahard (1979) provide a different framework for analysis of research studies of desegregation effects on student achievement from their earlier effort cited above. Using the body of studies from their previous review, they criticize the desegregation achievement studies as being of little value to policy-makers. They characterize this literature as policy-irrelevant rather than methodologically bad. They argue that desegregation research has not addressed sufficiently various issues such as the age of desegregating students, composition of the schools, amount of busing of white students, provision of bilingual-bicultural education for minorities from non-English-speaking backgrounds, and the role of social class in desegregation plans. They also cite the need for "control group" designs in such research efforts, acknowledging that such control group arrangements are generally impossible to arrange when legal requirements must be observed. Without adequate "controls," they feel that research will not be able to separate out the effect of desegregation from recent national changes in achievement nor decreases and increases in black-white achievement gaps.

Student achievement literature, as represented by a reading of selected articles described above, provides a context for evaluation of achievement trends in the Cleveland district. An increasing level of

black achievement nationwide coupled with evidence of beneficial effects of desegregation on black achievement offer bench marks for interpretation of findings from analyses of local data.

This literature review also provides guidance for design of strategies which will facilitate improvement of student achievement.

The following section identifies examples of key references in the literature which can guide district efforts related to school improvement and effective instruction.

School Improvement and Effective Instruction

The past five years have produced a new literature about what schools should do to make a difference in student achievement as well as a new movement to model schools accordingly. Popularized by Edmonds (1978) and others, [Austin (1981), Clark (1980), Tomlinson (1980), Phi Delta Kappa (1980), and Hersh et al (1981)] effective school tenets have been translated by state and local educational agencies into action plans to improve school effectiveness. Although the ingredients of "effectiveness" may change from study to study, there is an assumption that their effect in different schools at different times will produce similar results in all schools.

Smith and Purkey (1982), however, in their review of the literature on effective schools caution that these recipes for effectiveness may be simplistic solutions derived from non-experimental data. The "new" literature focuses on (1) the way that schools and school districts are structured and make decisions; (2) the process of change in schools and school districts; and (3) the way in which classrooms and schools can be changed to increase the time that is spent on productive instruction.

Smith and Purkey, despite their reservations about the intuitive recommendations for improvement of schools, prescribe a set of organizational and structural variable which can be set into place by administrative and bureaucratic means. In their view, school district leadership can initiate at least nine major factors. The factors produce other effects, which are "process-form" variables having to do with the climate and culture of the school. The latter conditions need to "grow" in a school and are not subject to bureaucratic manipulation. The nine "organizational-structure" factors are identified as school-site management, leadership, staff stability, curriculum articulation and organization, staff development, parental involvement and support, school-wide recognition of academic success, maximized learning time, and district support. Smith and Purkey theorize that these nine "organizational-structure" factors sustain four "process-form" variables--collaborative planning and collegial relationships; sense of community; clear goals and high expectations commonly shared; and order and discipline. Smith and Purkey conclude that these latter conditions constitute the "dynamic" of the school and that they seem responsible for an atmosphere that leads to increased student achievement.

Shoemaker and Fraser (1981), in identifying implications from studies of effective schools also emphasize the importance of school "dynamics." They cite that the most consistent finding in the majority of studies of school effectiveness is the crucial connection between expectations and achievement. This condition structures the role of the school principal as being one of a strong leader with high expectations and orientation toward cognitive goals for their schools. Undoubtedly, more precise inservice and preservice programs for principals are needed.

Drawing upon findings from a three-year study in 34 California school districts, Deal and Celotti (1980), support the principal's role as instructional leader but conclude that reality may block their doing business as usual. In this study, educational organizations were viewed as consisting of "vertical and horizontal" segments, only loosely connected with one another, rather than being tightly knit, cohesive organizations. Given that school districts, schools and classrooms operate independently as do individuals on each level, school principals may be able to accomplish much more as "colleagues" or "symbolic leaders" than by operating through formal channels of the school district.

Levine (1982), offers a different perspective of the administrative role in schools bent on becoming "effective." He reports administrators of the successful schools he studied as being supportive of teachers and skilled in providing a setting in which teachers could function effectively. These administrators were willing and able to interpret--and frequently bend--rules and regulations to enhance the effectiveness of their school programs. His view of teachers in these same buildings lends support to the process factors identified by Smith and Purkey (1982). He saw teachers in the improving schools as engaging in grade-level planning and decision-making, establishing instructional sequences, pacing instruction based on feedback from frequent monitoring of student progress, improving the quality of homework assignments and involving parents in students' learning. Such information reinforces the assumptions that these schools were achieving levels of collegiality and collaboration--those process variables identified by Smith and Purkey--which facilitated their academic goals.

It is clear that effective schools are effective because instruction is effective. In this selective review of literature offering perspectives for potential school improvement efforts, the classroom learning study of the International Association for the Evaluation of Educational Achievement (IEA) prepared by Levin and Long (1981) is important. The book focuses on three types of variables in classroom learning and instruction: (1) active learning time; (2) feedback and corrective procedures; and (3) instructional time. As the authors observe, these elements are highly related to student learning outcomes, are alterable, and can be observed within a relatively short time; and can be used by teachers at any level of education. This reference offers the possibility of study by a faculty as support for a school improvement plan.

Combining research on effective schools with that on effective classrooms, Squires, Huitt and Segars (1983) delineate a model for improvement of both school and classroom. Although emphasis in their array of school strategies reinforce those identified in the body of effective schools literature, their emphasis on the classroom offers an expanded context for consideration. Key teacher behaviors in the dimensions of classroom effectiveness include planning, management, and instruction. Important student behaviors include involvement, coverage, and success. The presentation is particularly lucid in presentation of the instructional events related to quality instruction. Applying their framework of teacher-student behaviors, they specify issues for action in supervision, inservice, and other instructional improvement efforts.

The authors also delve into the research literature of desegregation and find similar school processes operating in effectively desegregated schools. Conditions which enhanced life in desegregated schools include equal and fair access by students to academic and co-curricular school programs; a perception that the principal models expectations of fair and equal treatment; school personnel's provision of positive role models for children; high expectations for all students, regardless of race or class; and inservice training that encourages self-reflection and skill building in areas promoting equal opportunity.

Information and ideas from the series of national studies and reports also deserve consideration in this literature review. Spady and Marx (1982), in a critical analysis and synthesis of nine reports maintain a comprehensive view of what excellence in schools means and how local school districts can concretely make it happen. Weighing all of the issues and needs cited in the nine reports, the authors cluster the reports' recommendations into seven operational components that are an essential part of every school's basic operations. Comparison of the nine elements--goals and curriculum priorities; standards, expectations, and requirements; instructional content and process; school organization and instructional delivery; instructional time; use of available resources; and staff roles, responsibilities, and rewards--shows general overlap with the "ingredients" of effective schools.

Brophy's analysis of research (1982) concludes that findings consistently support the fact that teachers who are effective differ systematically in classroom behavior from those who are not. Citing eight teacher characteristics associated with student learning gains as being

validated by the research, Brophy believes that the challenge for school improvement projects will be to support teachers in implementing these findings. Comparison of the factors (teacher expectations, classroom management and organization curriculum pacing, active teaching, teaching to mastery, structuring learning as befits the grade level, and supportive learning environments) mirror those predicated as "effective" school components.

With a focus toward appropriate action by school districts and schools to improve education, which confront the issues in the major national reports and structure improvement efforts on a sound research base, Spady and Marx (1984) detail appropriate planning steps for "making excellence happen." This material demonstrates an information base to establish priorities for action and a decision-making process which can guide school staffs in developing their school improvement programs.

Finally, two recent articles reporting the efficacy of tutoring over other conditions of instruction, offer thoughtful perspectives about ways to improve student learning. Bloom (1984) summarizes recent graduate studies contrasting three conditions of instruction: conventional with 30 students per teacher, mastery learning with 30 students per teacher, and tutoring with a good tutor for each student or for two or three students simultaneously. Bloom reports striking differences in final achievement measures with 90% of the "tutored" students and 70% of the "mastery learning" students attaining a level of final achievement reached by only the highest 20% of the students under conventional instructional conditions.

The second account dealing with the effectiveness of tutoring, Belcher (1984) cites the claims in a Stanford University study, that peer tutoring proved to be the most cost effective of four methods in improving math and reading skills. Apparently, increasing instructional time, a major component in school improvement efforts, appears to be a relatively poor choice from a cost-effectiveness perspective.

Staff Development

Staff development represents another topic in the literature considered to be relevant to the district's development of school programs to improve student achievement. Joyce and his associates have made major contributions during the past five years by clarifying and validating strategies that make teacher training more effective.

Joyce and Showers (1980) delineate a model which incorporates theory, demonstration, practice, feedback, and classroom application. They stress that teachers can move from awareness of how to teach to teaching only through demonstration teaching, practice in simulated and classroom settings, in-class assistance, and feedback about their teaching. In their report on the "coaching of teaching," Joyce and Showers (1982) refine this concept, calling for teacher partners who exchange teaching and coaching roles. Coaching, as they would have it, augments the study of theory, observation of demonstrations and opportunities for practice with feedback.

McKibbing and Joyce (1982) describe findings from their study of the growth states more than 200 teachers and emphasize that teachers who otherwise would have been "passive" about using their newly acquired

teaching skills were propelled into action because the social climate of their school was active and compelling. Again, they see principals having substantial effect on the social climate of their schools both by direct leadership and by freeing energy of the most active teachers within their schools.

Joyce and Showers (1983) then move to emphasis on the transfer of the "new" teaching skills to classroom use. They propose that teacher training programs should incorporate study of the transfer process itself and that instructional leaders should provide the necessary support to create the appropriate climate and settings.

In summary, the purpose of this selective review of the literature has been to provide a context for interpretation of findings and to identify ideas and recommendations from the research that have potential for support and guidance of school improvement efforts in the school district. The evidence is clear. There are factors that critically affect student achievement. Staff can structure many of these conditions in the daily life of the schools, but may require meaningful, productive training opportunities which support the improvement efforts. The prognosis is promising. The possibilities are limitless.

METHOD

This study is primarily a secondary analysis of city-wide reading test data. This reading test data has resulted from the administration of CTBS reading tests in grades 1 through 12 (using appropriate forms and levels) during the spring semester of 1984 (pretest) and the spring semester of 1985 (posttest). This data was subsequently stored on electronically retrievable tape files, and analyzed using various appropriate descriptive and inferential statistics programs contained in the Statistical Package for the Social Sciences (SPSS). These data were analyzed in a variety of appropriate ways and are presented in the context of the related literature: a) to provide an enhanced understanding of the data, and b) to provide answers to specific questions relating to selected special issues (adversely affected, Project Perform, parity, race, sex, analysis by thirds, attendance, and the like).

Race, sex, grade level, and adversely affected status subgroups of students were described and compared using, primarily, the normal curve equivalent (NCE) form of the CTBS Reading Comprehension subtest score. The NCE is the preferred manner for expressing the test score because it is a true internal measure (unlike the percentile rank score which also has a minimum test value of 1, a maximum test value of 99, and a normed average value of 50), as well as the most precise reading measure available for the CTBS Reading Test. Many statistics require interval data for their use (mean, t-test, ANOVA, etc.). Relatedly, averages (means) of NCE scores for the above subgroups were computed, and also compared using appropriate statistics.

The NCE interval measures of reading performance were also reduced to a two cell categorization of data (i.e. to those above and below the 33rd percentile) and a three cell categorization of data (below 34th, above 66th, and between 34th and 66th percentiles). This collapsing of data into two and three cell categories of data effectively destroyed the interval quality of the data as well as the one-hundred point precision of the NCE measure. Subsequently this collapsed data was analyzed as nominal and/or as two and three point ordinal data. These additional types of data manipulations were included because: a) they provide a parallel to those methods used in the separate Parity Study; b) they respond affirmatively to the recommendations of an external consultant concerning the format and methods used in reading evaluations in general; and c) they provide an interesting, complementary, useful, and in some cases a more readily understandable display of the reading data for the lay person.

FINDINGS

Introduction

The primary objective of this study was to analyze the 1984-1985 data in order to gain further insights into what the causes of reading improvement might be within the Cleveland City Schools student population.

Causality. The author feels compelled to point out that the issue of establishing causality was and remains extremely troublesome. In the rigorous sense, causality has not been established. Moreover, it cannot be established in the rigorous scientific sense. To do so would require numerous involuntary student assignments, which would be contrary to the expected best interests of many students, into control (non-treatment) groups. This would be contrary to both ethical and educational principles. Also required would have been establishing an experimental design with controls prior to the educational events under investigation taking place. This investigative task has of necessity proceeded on an ex post facto (after the fact) basis. Therefore any treatment of causality must proceed on a conceptual and rational basis alone, without benefit of scientific, experimental research design. However, such rational arguments will be based on various quantitative analyses of actual data. Whether such analyses will establish causality satisfactorily in either the legal or public opinion sense will not be conjectured here. The third point to be made is that the variables ("factors") considered are restricted to those for which some sort of usable measurement has been made. Quantitative analyses cannot be

conducted on "factors" (variables) never measured. When the set of measurements falls far short of that desired, a related comment will be made. However, restraint will be observed against venturing forth with data-poor conjecturing. On the other hand causality may be suggested--if not concluded outright--from data collected and analyzed in a non-rigorous fashion. The same data may be "sliced" and viewed in several different ways so that the same educational phenomena may be seen from several different "angles" or perspectives--the purpose of which is to increase the depth and breadth of understanding.

General Analysis of Student Data

The Comprehensive Test of Basic Skills (CTBS) Reading Test is a standardized, nationally normed test of reading skills, available in various forms for use at various grade levels, grades 1-12. Most levels have vocabulary and reading comprehension subtests.

The student data set was created by pairing pretest (Spring, 1982) with posttest (Spring, 1983) CTBS Reading Test results, and then adding selected variables to each student's data record by linking this test file with the computerized Active Pupil Record File. This was done grade by grade and the resulting data from all grades were then "spooled" together onto a larger tape for analysis. The result was a tape containing unscreened records for students with pretest, or posttest, or both. If a student did not take either the pretest or posttest, then it is obvious that they could not be included in any of the reading comprehension analyses. Of the entire group, 43.8% were in elementary schools, 25.1% in junior high schools, 22.6% in senior high schools, 6.0% in special schools and institutions, and 2.4% in schools that could not be

identified by type. Unless otherwise stated, the measure of primary interest and use in this study is the reading comprehension subtest score.

In comparing pretest scores to posttest scores it was found that for the 41,619 who had both scores: 57.4% (23,890) scored above the 33rd percentile on both the pretest and posttest, 17.1% (7,129) scored at or below on both, 12.3% (5,107) moved from at or below to above the 33rd percentile, and 13.2% (5,493) moved from above to at or below the 33rd percentile. Viewing the system as a whole in this manner, it can be seen that there was not an overall improvement in reading comprehension scores for the 1984-1985 school year. These findings may not be validly inferred to that group of students who were missing either or both of the test scores, since it was relatedly not possible to include such types in this analysis.

Average reading comprehension pretest scores were also compared with average posttest scores. Adjusted percentile rank scores, called NCEs (meaning normal curve equivalents), were used for these analyses, since they have been fitted into the normal distribution and (unlike percentile rank or grade equivalent scores) may be used in performing any of the arithmetic functions (i.e., multiplication, division, etc.), and retain the greater degree of precision and accuracy lost when using stanines or when grouping into thirds. Maintaining the same NCE score on successive testings (that is, having zero change) indicates that student achievement has kept up with the national norm group. Any positive change in an NCE score indicates a growth rate exceeding the national norm. Pretest scores as well as posttest scores for 1984-1985 were available for grades 1 through 12. The corresponding average posttest scores were greater than the average pretest NCEs for only five of the twelve grades.

It must be remembered that there were a number of students who did not have a pretest score or did not have a posttest score. Because of this the group on which the average pretest score was computed was not exactly the same group as that for which the overall average posttest score was based. To achieve this congruence, one-score-only students were reluctantly omitted from an additional computation of average pretest to posttest NCE gain scores. There were 41,615 students who had both pretest and posttest scores as well as a grade level indicator. Based on this data set, the average NCE gain score was positive for seven of the twelve grades. This means that the average student growth in reading comprehension in those seven grades exceeded the growth rate of students in comparable grade levels using national norms. They achieved at a faster rate in reading than most other students in the United States in these seven grades. These seven grades were 1, 3, 5, 6, 8, 9, and 10. In the remaining five grades the average reading comprehension growth rate was not up to the national average, although there was growth in the absolute sense. See Tables 1, 2 and 3 for more statistical detail.

Insert Tables 1, 2 and 3 here

For the sixth straight year in a row, there has been a significant drop in average CTBS Reading Comprehension NCE scores from grade three to grade four, grade six to grade seven, and from grade nine to grade eleven. Each of these represent a transition period for each student from one building level to another, although that is not always

Table 1

The Average (Mean) Normal Curve Equivalent (NCE)
CTBS Reading Comprehension Pretest Scores by Race and Grade for the
1984-1985 School Year (with Sample Size)

Grade	Black	White	Hispanic	Asian	Native American	All Students
1	34.7 (417)	31.9 (186)	26.0 (12)	----	35.0 (1)	33.7 (616)
2	58.0 (3380)	58.3 (1140)	61.2 (29)	68.5 (19)	66.6 (13)	58.2 (4681)
3	52.7 (3036)	54.4 (1065)	54.0 (123)	63.2 (33)	50.3 (18)	53.2 (4275)
4	50.9 (3102)	55.5 (998)	52.0 (138)	62.7 (28)	55.9 (16)	52.1 (4282)
5	46.9 (3045)	49.8 (1019)	50.9 (132)	58.7 (30)	52.2 (14)	47.8 (4240)
6	47.9 (3018)	52.1 (1012)	46.9 (151)	51.1 (33)	60.5 (6)	48.9 (4220)
7	47.3 (3376)	53.0 (871)	49.6 (106)	51.8 (19)	47.5 (6)	48.5 (4378)
8	45.5 (3054)	52.9 (788)	49.1 (101)	57.5 (19)	49.0 (5)	47.2 (3967)
9	46.8 (2596)	53.6 (679)	48.4 (107)	58.4 (10)	42.7 (3)	48.2 (3395)
10	45.6 (2286)	50.5 (562)	44.1 (111)	40.4 (14)	50.6 (7)	46.4 (2980)
11	42.4 (1975)	53.2 (495)	43.9 (93)	40.7 (33)	58.5 (6)	44.5 (2602)
12	44.0 (1490)	53.4 (410)	43.9 (70)	57.5 (24)	54.8 (4)	46.1 (1998)
All Grades	48.4(30775)	53.1 (9225)	49.7(1273)	55.5(262)	54.3 (99)	49.5(41634)

Table 2

The Average (Mean) Normal Curve Equivalent (NCE)
CTBS Reading Comprehension Posttest Scores by Race and Grade
for the 1984-1985 School Year (with Sample Size)

Grade	Black	White	Hispanic	Asian	Native American	All Students
1	56.1 (423)	54.8 (189)	52.8 (13)	----	49.0 (1)	55.6 (626)
2	51.2 (3849)	51.8 (1288)	54.8 (142)	61.2 (19)	50.3 (16)	51.4 (5314)
3	52.2 (3390)	55.7 (1203)	52.7 (145)	64.6 (38)	51.3 (23)	53.2 (4799)
4	47.1 (3333)	53.2 (1071)	48.3 (159)	56.1 (33)	54.7 (21)	48.6 (4617)
5	47.5 (3324)	51.4 (1112)	49.7 (152)	60.9 (38)	50.6 (14)	48.6 (4640)
6	49.8 (3265)	54.0 (1115)	48.0 (165)	54.9 (34)	57.7 (7)	50.8 (4586)
7	45.4 (3583)	49.5 (965)	45.5 (113)	52.9 (19)	46.5 (6)	46.3 (4686)
8	45.5 (3490)	52.8 (931)	47.2 (121)	58.7 (22)	48.6 (5)	47.1 (4569)
9	47.2 (2899)	52.3 (776)	48.3 (116)	54.4 (11)	53.8 (4)	48.3 (3806)
10	45.1 (2512)	50.8 (608)	43.9 (131)	45.0 (16)	45.8 (9)	46.1 (3276)
11	41.2 (2393)	51.1 (567)	43.1 (112)	45.6 (37)	52.4 (8)	43.1 (3117)
12	43.2 (1724)	52.3 (456)	43.2 (82)	59.5 (26)	51.5 (4)	45.2 (2292)
All Grades	47.4(34185)	52.5(10281)	48.1(1451)	56.3(293)	51.4(118)	48.6(46328)

Table 3

The Average (Mean) Normal Curve Equivalent (NCE)
CTBS Reading Comprehension Gain (Difference) Scores by Race and Grade
for the 1984-1985 School Year (with Sample Size)

Grade	Black	White	Hispanic	Asian	Native American	All Students
1	21.4 (416)	22.9 (186)	26.3 (12)	----	14.0 (1)	21.9 (615)
2	-6.0 (3374)	-5.3(1137)	-6.0 (128)	-7.4 (19)	-15.4 (13)	-5.8 (4671)
3	0.0 (3036)	1.8(1065)	-0.4 (122)	2.0 (33)	-0.3 (18)	0.5 (4274)
4	-3.5 (3102)	-2.1 (997)	-3.1 (137)	-7.0 (28)	1.3 (16)	-3.2 (4280)
5	1.3 (3040)	2.1(1019)	0.7 (132)	7.0 (30)	-1.6 (14)	1.5 (4235)
6	2.2 (3018)	2.6(1012)	1.2 (151)	4.1 (33)	-0.7 (6)	2.3 (4220)
7	-1.7 (3376)	-2.9 (871)	-3.4 (106)	1.1 (19)	-1.0 (6)	-1.9 (4378)
8	0.8 (3054)	0.7 (788)	-0.9 (101)	1.2 (19)	-0.4 (5)	0.8 (3967)
9	0.8 (2596)	-0.9 (679)	0.7 (107)	-5.0 (10)	2.3 (3)	0.5 (3395)
10	-0.1 (2286)	0.5 (562)	0.2 (111)	6.4 (14)	-0.9 (7)	0.1 (2980)
11	-0.7 (1975)	-0.8 (495)	-1.5 (93)	3.8 (33)	-5.3 (6)	-0.7 (2602)
12	-0.2 (1490)	-0.7 (410)	0.1 (70)	3.8 (24)	-3.3 (4)	-0.2 (1998)
All Grades	-0.5(30763)	-0.0(9221)	-0.9(1270)	1.4(262)	-2.5 (99)	-0.4(41615)

the case between grade three and grade four. That is because some of the elementary schools have a K-6 arrangement, whereas some have a primary (K-3) or intermediate (4-6) arrangement. Performance declines as a consequence of adjusting to a new building and to a new building level is one possible explanation, particularly between grades six and seven. Another explanation might be the characteristics (anomalies) of the tests themselves, although the CTBS Reading Comprehension Test is a well-established, standardized measure based on national norms. Discussions of this trend was presented in both of the two prior discrepant reading studies, the first of which used data from spring 1980 and spring 1981 testings, and the second of which used data from spring 1982 and spring 1983 data. This present study uses data taken from spring 1984 and spring 1985 data. It might be well worth while to continue investigations as to the "why" this trend is consistently found from year to year. If it represents real declines in student reading achievement growth rates, rather than characteristics of the test and test norms, then this needs to be known so that corrective actions(s) in the instructional design and delivery system can be taken. It is also possible that the test does not represent what is actually being taught and emphasized at those problematic grade levels (4, 7, and 10-11) as well as it does at the other grade levels. This would represent a problem of test validity. If that were found to be the reason for the decline, then either a more valid test or modifications in course content should be provided. In any case, additional clarifications should be sought.

The new competency test may also be useful in this regard. Once this new set of competency tests is sufficiently refined as a set of valid

and reliable measures of local reading competency, then similar pattern analyses can be done using the competency tests at each grade level. Concurrent validity calculations can be made between local competency and nationally standardized achievement tests. This approach should be useful in particular at grade four. However at grade seven it appears likely that the primary explanation for the precipitous decline in reading achievement scores is organizational structure, perhaps also curricular strategy. Grade seven is a year of articulation for all students. Not only do they move from an elementary to secondary school building, but that building is typically much larger in size and enrollment, inhabited by a student body entering into the difficult adolescent stage, and structured organizationally with student movement from classroom to classroom and teacher to teacher for each subject. This contrasts sharply with the elementary school structure and climate. If the current school structure is retained (which with the newly approved facilities use plan it apparently has, except for beginning high school at grade nine instead of grade ten), then consideration should be given to providing transitional support to students which will facilitate their successful movement into the secondary school environment. The prior discrepant reading studies suggested that a serious reconsideration of moving to a middle school (grades 5-8 or 6-8) structure might be in order. That would have reduced the number of transition grades from three to two, as well as might have placed them at more appropriate grade levels in terms of student development and achievement. Such would have required deliberate, long-range planning by the key curriculum and facilities utilization decision-makers, working in concert with one another. For a variety of

reasons this was not to be. Thus the concern for declining reading scores at grade seven must be dealt with by providing transitional support for those students and by strengthening the instructional design and delivery system.

Finally, the precipitous drop in reading achievement scores for the third articulation period (grades 10-11)--found also when studying 1979-80, 1980-81, 1981-82, and 1982-83 data--was also found using 1983-84 and 1984-85 data.

Gain scores. It should be kept in mind that a zero gain score (no gain) means that a student maintained his or her relative position with respect to a national sample of youngsters. That is, a zero gain score would represent that the student had in fact improved his/her reading skills at a normal rate, using these national norms as the criterion. Pretest (Spring, 1984) to posttest (Spring, 1985) changes were analyzed using this type of NCE based gain score. This analysis of necessity was limited to those scores of students who took both the pretest and the posttest. Thus their number will be less than either for the pretest or the posttest. As discussed before from another perspective, negative change for articulation grades four, seven, and eleven were found. For grade two, an educationally significant decline in the rate of reading comprehension achievement was also found. This negative grade two result was not found in the 1980-1981 study, but was found in the 1982-1983 study. It is important that this trend be reversed, especially in grades two and four, since it is critical that the early good performance in reading in the Cleveland City Schools be

maintained. The system-wide average gain score for all students was slightly negative, the first time that such an overall negative result was found since this series of discrepant reading studies began. It is imperative that this negative change in overall reading achievement performance not repeat itself in the coming years. See the bar chart in Figure 1 for more graphic detail of these 1984-1985 results.

Insert Figure 1

Black-to-white gain score comparisons. Gain score differences between black and white students are much more modest in this 1984-1985 school year study than in the initial 1980-1981 study. For each of the 1984-1985 elementary grades the average gain score for white students was more favorable than for blacks. The opposite was true for the secondary grades, where for each grade except grade ten the average gain score was more favorable for blacks. Since there is a cumulative effect, it is important to attempt to further reduce the gain-score difference between black and white reading comprehension gains in the early elementary grades, while at the same time enhancing the gains for all students. See Figure 2 for more detail.

Insert Figure 2

Racial comparisons. Although the court order was particularly concerned with the black minority group, it is of importance educationally to look at the other racial groups one by one. Comparisons were relatedly

Figure 1

The Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Difference) Scores by Grade Level for the Cleveland Public Schools for the 1984-1985 School Year

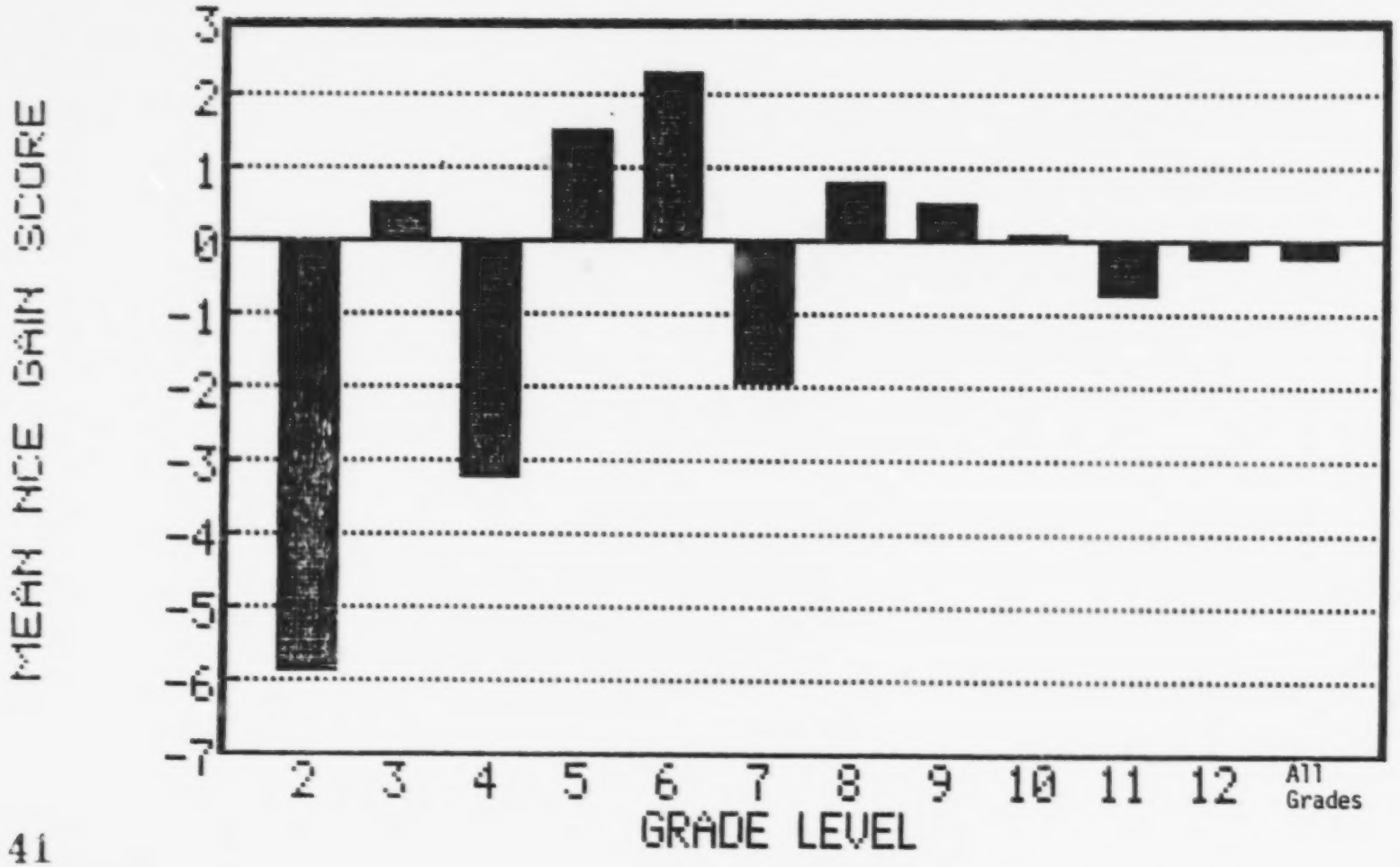
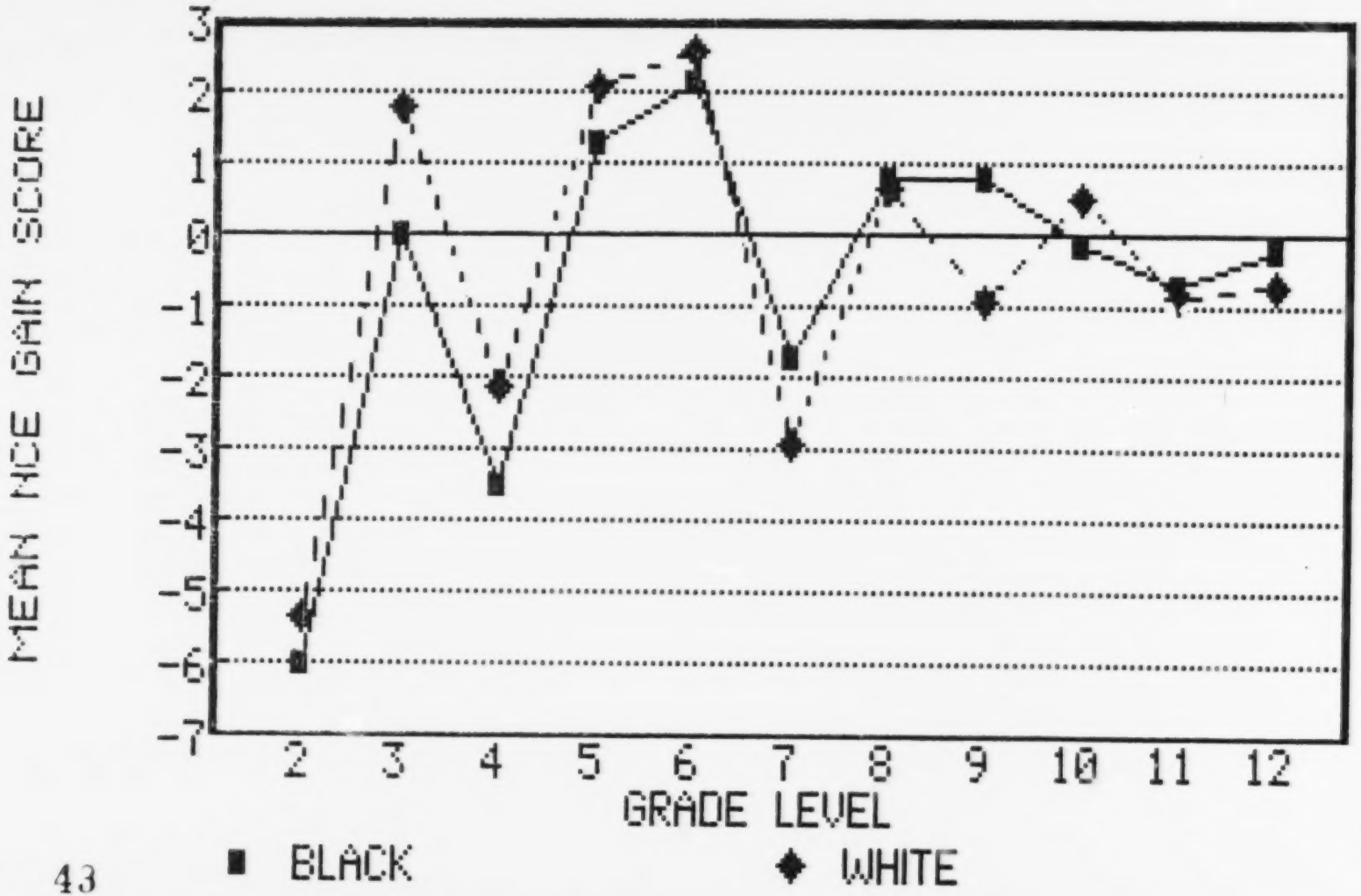


Figure 2

A Comparison between Black and White Students' Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Difference) Scores in the Cleveland Public Schools for the 1984-1985 School Year



made using the racial/ethnic category coding structure employed in reporting on state and federally funded projects. Of the five racial groups, the Asian group had both the highest average pretest score (55.5 NCEs), posttest score (56.3 NCEs), and gain score (+1.4 NCEs). The black and Hispanic groups were the only two race groups whose average NCE pretest and posttest scores fell below 50 (the national average). In addition to blacks (-.5 NCE), and Hispanics (-.9 NCE), Native Americans also had a negative average gain score (the greatest, at -2.5 NCEs). As the third largest ethnic group (behind blacks and whites) these shortfalls with respect to Hispanic student reading comprehension achievement and gains should be given special attention in curriculum planning and funding of special programs. Further detail of these racial differences are presented in Table 4. It should be kept in mind that many of the Hispanic students are not included in the regular Citywide Testing Program (such as those in the Lau Program), and are therefore excluded from this analysis. Many of these students are tested separately with the results maintained in a separate data base.

Insert Table 4

Using Parity Study criteria for data analyses. Compliance with the court order resulted in a Parity Study designed by a consultant and carried out by school district personnel. The Parity Study was focused specifically on those students who scored above the 33rd percentile in contrast to those who scored at or below the 33rd percentile. Although such dichotomization does mask differences in the distribution of scores

Table 4

Average 1984-1985 CTBS Reading Comprehension
NCE Scores (with Number of Students*) by Race

Race	Pretest	Posttest	Gain Score
Black	48.4 (30,775)	47.4 (34,185)	-.5 (30,763)
White	53.1 (9,225)	52.5 (10,281)	-.0 (9,221)
Hispanic	49.7 (1,273)	48.1 (1,451)	-.9 (1,270)
Asian	55.5 (262)	56.3 (293)	+1.4 (262)
Native American	54.3 (99)	51.4 (118)	-2.5 (99)
All Students	49.5 (41,634)	48.6 (46,328)	-.4 (41,615)

*The number of students varies from pretest to posttest to gain score because some students did not take the pretest or posttest, because of chronic absenteeism, mobility or withdrawal. Only those with both a pretest and a posttest score could also have a gain score computed.

within each of these two groups, the dichotomization does perhaps enhance the broader understandability of the results due to the simplification. This grouping system was used on the pretest and posttest data for 1984-1985. Those students who scored at or below the 33rd percentile on both the pretests and posttests, as well as those who scored above the 33rd percentile on both of these tests represented no change. Therefore, those moving from at or below the 33rd percentile to above it were identified, counted and contrasted with those moving from above to at or below by both school level and type and by school building within school type category.

It was found that the proportion of those students moving from below to above the 33rd percentile in contrast to the proportion moving from above to below was nearly the same for all building types, except for junior high schools. That is, elementary, senior high, and special schools and institutions (magnet, etc.) were nearly alike. The junior high schools did least favorably using this method of comparison. Of those junior high school students moving across the 33rd percentile cut score, more than 25% more moved from above to below (1500 for 56.5%) than moved from below to above the 33rd percentile cut score (1155 for 43.5%). This is clearly an undesired result. The percent moving from above to below and below to above for elementary, senior high, and special schools and institutions were nearly the same at 49.8%, 49.5%, and 49.8% vs. 50.2%, 50.5%, and 50.2%, respectively. These results differed from those obtained for the 1983-1984 school year where senior high school students did most favorably, with special schools and institutions being the only types of schools where more students moved from above to below than from

below to above the cut score. For 1984-1985, 48.2% moved in a positive direction in contrast to 50.2% moving in a negative direction across the cut score. This is clearly not a desired outcome, since the district has a mandate to do much better than simply maintain the status quo.

Significant differences were found between schools, within every building type. If we look at all students moving across the 33rd percentile cut score from pretest to posttest, building by building, it is possible to identify those buildings with exemplary performance and those in need of improvement. Of the one-hundred and twenty-six (126) schools meeting the criterion (i.e., having more than five students moving either way across the cut score), sixteen had more than sixty percent of all such transition students moving from below to above the cut score, a net positive result. In contrast, twenty other schools had over sixty percent of all such transition students move in a negative direction, from above the cut score to below the cut score. Improvements are clearly called for in these twenty schools. These results are compiled and presented by each building type in Table 5. Every school is individually identified and described in these terms in Appendix A. These individual school identities and descriptions can be used to plan reading comprehension achievement improvements in the twenty schools most in need. Those setting curriculum priorities in those schools should review the status given reading and other language arts coursework in view of these findings. Good language skills are basic to any educational success.

Insert Table 5

Table 5

Percent (and Number*) of Cleveland Public Schools by Building Type, Categorized by the Percent of the Total Transition Students** in the School Who Moved Across the 33rd Percentile Cut Score in a Positive Direction

School Building Categorization Based on the Percent of the Transition** Students in the School Who Moved Positively Across the Cut Score (33rd Percentile)	Percent of Schools (with Number of Schools)			
	Elementary	Junior High	Senior High	Special Schools
85 - 89.9%	1.2% (1)			
80 - 84.9%				
75 - 79.9%	1.2% (1)			
70 - 74.9%	2.4% (2)			
65 - 69.9%	3.6% (3)	4.4% (1)	8.3% (1)	
60 - 64.9%	5.9% (5)		8.3% (1)	14.3% (1)
55 - 59.9%	11.9% (10)	8.7% (2)	16.7% (2)	14.3% (1)
50 - 54.9%	16.7% (14)	4.4% (1)		14.3% (1)
45 - 49.9%	21.4% (18)	21.7% (5)	33.4% (4)	42.8% (3)
40 - 44.9%	26.1% (22)	21.7% (5)	16.7% (2)	
35 - 39.9%	3.6% (3)	21.7% (5)	8.3% (1)	14.3% (1)
30 - 34.9%	3.6% (3)	17.4% (4)	8.3% (1)	
25 - 29.9%	2.4% (2)			
Totals 25 - 89.9%	100.0% (84)	100.0% (23)	100.0% (12)	100.0% (7)

*Schools having a combined total of less than five students moving across the 33rd percentile cut score in either direction were omitted.

**Transition students are the sum total of all students who, from pretest to posttest, moved from above to below or below to above the 33rd percentile (cut score). All of the remaining students had both pretest and posttest scores either: a) below the 33rd percentile, or b) above the 33rd percentile.

Adversely affected group related runs. As a consequence of the remedial order, students adversely affected by segregation were identified. These are primarily minority students (but not exclusively) who had been educated in segregated schools prior to desegregation and who also scored at or below the 33rd percentile on the 1980-81 and 1981-82 CTBS Reading Comprehension Tests and the 1980-81 Language Mechanics Test. Students lacking the critical tests score(s) were retained as part of the adversely affected group. Some are still being educated in the Cleveland City Schools. They were identified for this study by using a computer tape with their student identification numbers on it and by flagging ("marking") all of the matching student records on the master tape used for this study. Of the 67,403 student records on this 1984-1985 multigrade tape, 9,512 (14.1%) were adversely affected and 57,891 (85.9%) were non-adversely affected. These "marked" students (adversely affected) were examined, compared, and contrasted with non-adversely affected students. Using all of the data available for each analysis, reading comprehension pretest, posttest, and gain scores were calculated and computed. The average (mean) pretest score for the non-adversely affected group was 51.1 NCEs (N = 37,161) in contrast to an average 36.5 NCEs (N = 4,477) for the adversely affected group, for educationally significant difference of 14.6 NCE points (compared with a difference of 21.3 NCEs found in the 1982-1983 study). This "pretest" occurred in Spring, 1984. It is important to note that the adversely affected students were selected in part on the basis of their scoring at or below the 33rd percentile on the same and/or comparable tests given in the Spring of 1981. Therefore, it is not extremely surprising that this type of reading achievement

disparity would residually be found in 1982, 1983, and even in 1984. Of the 67,403 total 1984-1985 cases, 25,765 (38.2%) lacked pretest data. One of the explanations for this pertains to grade one, which does not have a pretest (i.e., kindergarten reading test). Another significant reason for missing data is student in-migration and out-migration from the district. Another factor would be the system's inability to arrange a make-up test for the extremely truant or chronically absent students.

Posttest results were also compared. The adversely affected group averaged 36.2 NCEs (N = 5,394, a slight decrease of .3 NCE below the pretest average) vs. 50.2 NCEs (N = 40,940, for a decrease of .9 of an NCE) for the non-adversely affected group. The posttest differences between groups was 14.0 NCEs. Missing cases for this posttest analysis totaled 31.3% (21,069). In addition to some of the prior reasons, most pretested twelfth graders (Spring, 1984) would have been absent for the 1985 posttest due to 1984 graduation.

Finally, gain scores were calculated and compared. The adversely affected group (N = 4,476) remained virtually the same at -.02 NCE vs. a slight decline of -.4 NCE (37,143) for the non-adversely affected students. Missing cases for this analysis totaled 38.3%, a cumulative result of the reasons given before.

It must be remembered that each of these three analyses was done using any and all data available. Thus, some cases had pretest data and not post, some post but not pre, and gain scores required both. A research decision was made to include all cases available for a given analysis in the interest of representing as many student types (chronic absentees, in- and out-migrators, withdrawals and dropouts, etc.) as possible, rather than having a neat and simpler but much less

representative set of matched cases. Generalizability was given the nod over comparability. The reader should keep this in mind as this report is read. From these findings it appears that the system as a whole was not making significant gains in 1984-1985 in reducing the discrepancy between adversely affected students and non-adversely affected students, nor in improving the overall reading achievement levels of the district. It is not clear if the suicide under stress of the then school superintendent and his replacement mid-year (1984-1985) by an interim superintendent were contributing factors, and if so, to what degree. These results do show that educationally consequential differences still exist between adversely and non-adversely affected students, and that more work needs to be done to further reduce these differences.

Similar results were found using reading vocabulary scores, except that the overall vocabulary gain scores were slightly positive, with an average gain score for the non-adversely affected student group at +.58 and +.83 NCE for the adversely affected student group. Adversely affected students tended to be older (at an average 16.7 years old as of September 30, 1985) than non-adversely affected students (an average 13.6 years old on September 30, 1985), probably reflecting a greater non-promotion rate as well as the fact that the youngest students in the lowest grades were not subjected to a segregated school environment, and thus by definition could not be adversely affected.

Care must also be taken to insure that the non-adversely affected student group is receiving optimum educational opportunities and is experiencing optimum personal growth. This analysis suggests that the non-adversely affected student population has settled on a plateau

at about the national norm. Every effort should be made to challenge those at or above the normal range of performance to achieve at an even higher level. This should be translated into specific curricular programs and strategies. Unfortunately, the adversely affected student group has also settled on a reading comprehension achievement plateau--although their plateau is much below the national average. There is obviously more work to be done in raising this adversely affected student group's reading achievement.

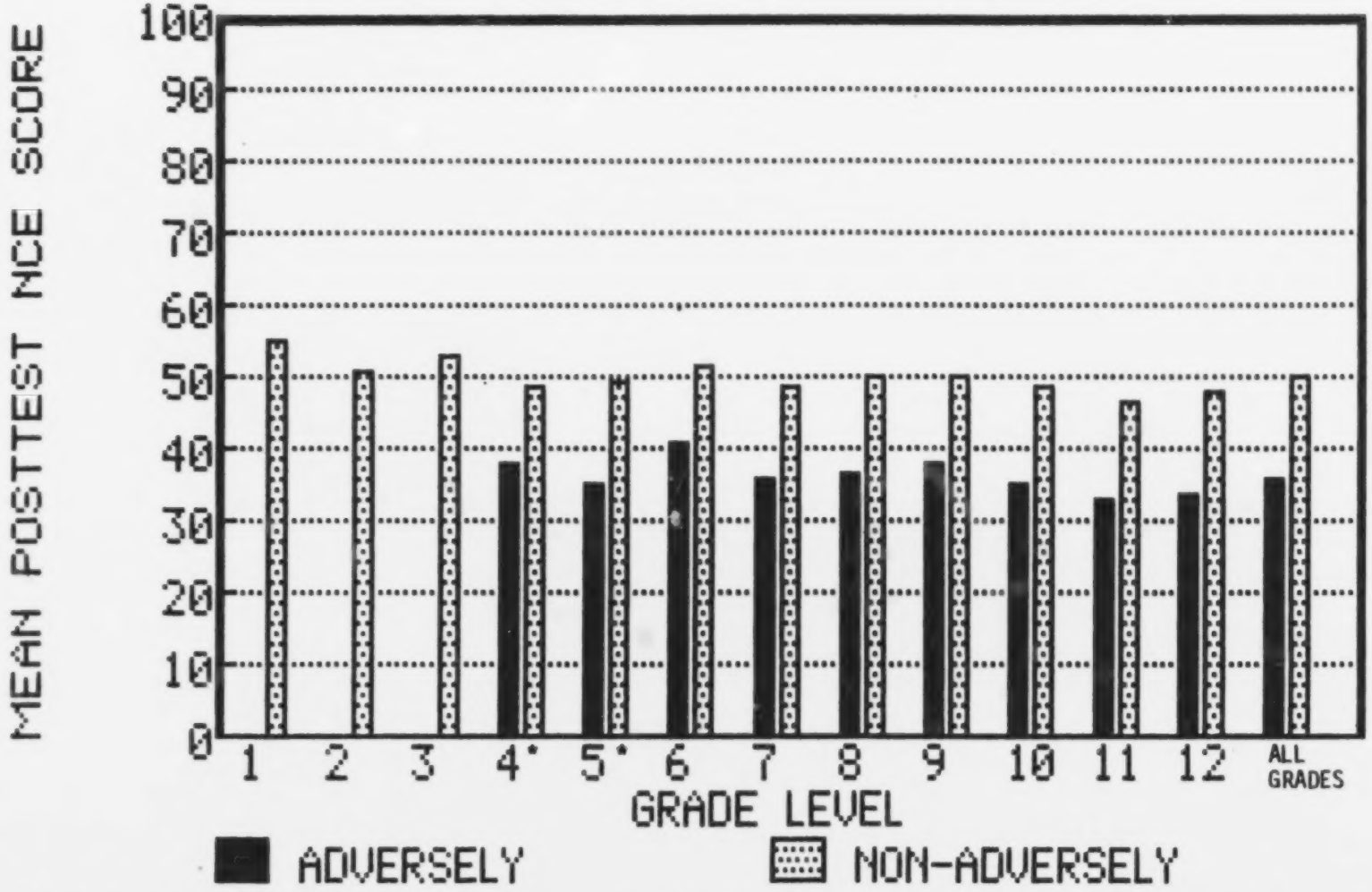
Not only are there significant differences systemwide between the adversely affected student and the non-adversely affected student groups, but these differences in posttest and gain scores exist at each grade level. See Figures 3 and 4. The grade-to-grade pattern is similar for both groups. For instance, there is a precipitous decline in gain-scores for both groups at articulation grades four and seven. See Figure 4. There are a few interesting exceptions, however. Although the adversely affected group displayed markedly improved gain-scores for years nine and eleven, a decline was found for the non-adversely affected group for these same two years. Again see Figure 4.

Insert Figures 3 and 4

Relationship between average daily attendance rate and reading comprehension achievement level. Students in the Cleveland City Schools were grouped in terms of their level of performance on the spring, 1985 CTBS Reading Comprehension test. Three groups were formed. The bottom third group contained those students who scored at or below the 33rd percentile, using national norms. The top third group contained those

Figure 3

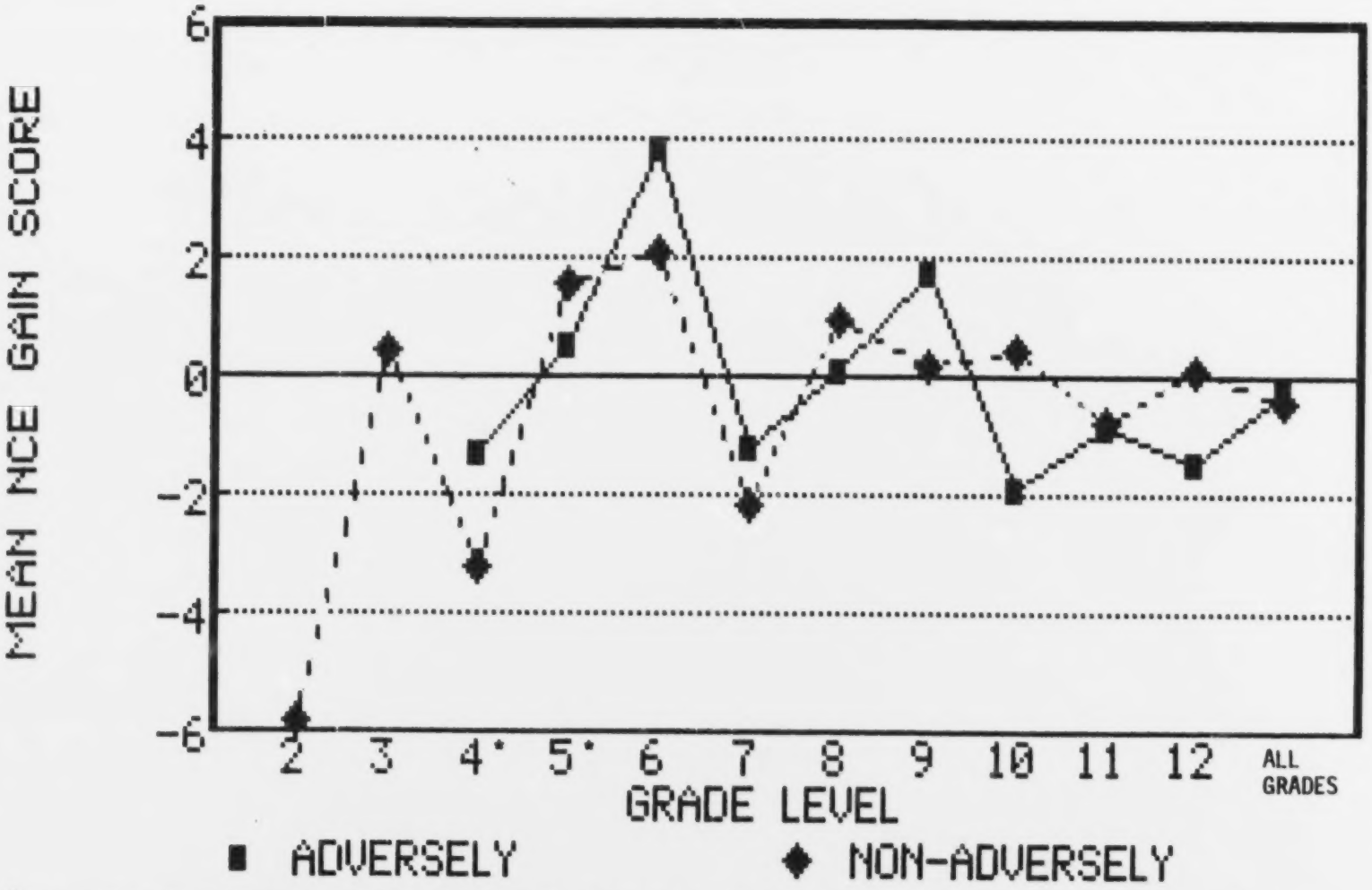
A Comparison Between Adversely and Non-Adversely Affected Student Group Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Posttest Scores in the Cleveland Public Schools for the 1984-1985 School Year



*Sixty fourth grade and 254 fifth grade adversely affected student scores were available and used in computing these averages. Each of the other grades had over 490 adversely affected scores available.

Figure 4

A Comparison Between Adversely and Non-Adversely Affected Group Average (Mean) Normal Curve Equivalent (NCE) CTBS Reading Comprehension Gain (Pretest to Posttest Difference) Scores in the Cleveland Public Schools for the 1984-1985 School Year



*Forty-nine fourth grade and 204 fifth grade adversely affected student scores were available and used in computing these averages. Each of the other grades had over 400 adversely affected scores available.

students scoring at or above the 67th percentile. The middle third group contained those students scoring between the bottom and top third groups. These top, middle, and bottom third groups were further broken down in terms of their race and sex subgroups, and compared and contrasted in terms of their attendance rates. Considering all students together, the top third reading group had greater average daily attendance rate (ADA) than the middle third group, and the middle group had a greater ADA rate than the bottom third group. This was also true for each of the five racial groups with one exception. The ADA rate for the middle third group of Asians and Pacific Islanders (at a very high 96.7%) was slightly higher than that for the top third group of this same racial group (at 96.3%). See Table 6 for more detail.

Similar top to bottom thirds trends were also found for both male and female students. Top third reading achievement boys and girls were found to have a higher ADA rate than bottom third students, and this was found true in top to bottom third comparisons for all racial groups within each sex. See Table 7 for more statistical detail.

Asian and Pacific Islanders clearly had the highest ADA rate of any racial group. Blacks were the only other racial group which had an ADA rate above the overall average. Next, in order of overall ADA rate were Hispanics, then native Americans (Indians and Eskimos), with whites having the lowest overall ADA rate, and the lowest ADA rate of any middle or top third reading group sorted by race. Sex based bottom, middle, and top reading achievement groups had fairly comparable ADA rates. See Tables 6 and 7 for more statistical detail.

Insert Tables 6 and 7

Table 6

Average Daily Attendance Rates (in Percent) by Race and by CTBS Reading Comprehension Posttest Based Student Achievement Groups (Bottom, Middle, and Top Thirds) in the 1984-1985 Cleveland City Schools

Race	Bottom Third Reading Group	Middle Third Reading Group	Top Third Reading Group	All Students
Black	90.6	92.8	94.3	
White	86.0	88.8	90.7	
Hispanic	89.3	90.5	92.4	
Native American (Indian or Eskimo)	85.8	90.2	92.8	
Asian or Pacific Islander	94.1	96.7	96.3	
All Students	89.8	91.9	93.1	91.6

Table 7

Average Daily Attendance Rates (in Percent) by Sex and Race within Reading Comprehension Posttest Based Student Achievement Groups (Bottom, Middle and Top Thirds) in the 1984-1985 Cleveland City Schools

Sex	Race	Bottom Third Reading Group	Middle Third Reading Group	Top Third Reading Group	All Students
Male		90.0	92.1	93.1	
	Black	90.9	93.1	94.3	
	White	86.1	88.9	90.8	
	Hispanic	89.0	91.6	92.2	
	Native American	82.4	90.9	88.8	
	Asian	92.9	96.8	96.6	
Female		89.5	91.7	93.2	
	Black	90.3	92.6	94.2	
	White	85.8	88.7	90.6	
	Hispanic	89.6	89.5	92.6	
	Native American	90.3	89.1	95.5	
	Asian	95.6	96.6	96.0	
All Students		89.8	91.9	93.1	91.6

Selected sex based differences. When the top, middle, and bottom one-third reading comprehension achievement groups of students were compared, it was found that a significantly greater proportion of boys than girls were in the bottom third reading achievement group (33.1% vs. 25.9%) and that a significantly lesser proportion of boys than girls were in the top one-third reading achievement group (21.8% vs. 25.3%). This was found true for the black and white racial subgroups, but not for the Asian and Pacific Islander, Hispanic, or native American (Indian and Eskimo) subgroups.

It was also found that the proportion of male students in the adversely affected student group was significantly greater than in the non-adversely affected group (58.2% vs. 50.2%). That is, male students were more likely to be categorized as adversely affected than female. This significant difference was again found for the black and white racial subgroups, but not for the other three racial subgroups.

In both analyses presented above the same trend was found for native Americans as was found for blacks and whites, but because of the small numbers involved the difference was not statistically significant.

Male and female students were also compared in terms of their reading "gain" (change) scores. Each student was categorized into one of three gain score categories--having a net pretest to posttest CTBS reading comprehension "gain" score of: a) at least four NCE's, b) less than a positive four NCE's but greater than a negative four NCE's, and c) a negative (drop of) four NCE's or more. Proportionately more boys than girls were in the extreme gain score groups, and proportionately more girls than boys were found to be in the middle gain score group. This

trend was generally found for each of the five racial subgroups, with several relatively minor exceptions. However, in every racial subgroup proportionately more females were in the middle gain score group than were males.

A similar NCE "gain" (change) score value of plus or minus seven NCE's was also used in a separate analysis in place of the value of four NCE's used in the above analysis. Similar results were found. Gain scores of four and seven NCE's were used because these are the NCE change score values which have been used in many school district compensatory program evaluations in the past. See Appendix B for more statistical detail of these sex based analyses.

Various other comparisons between bottom, middle, and top one-third reading comprehension achievement student groups. A consultant to the Office of School Monitoring and Community Relations (OSMCR) has suggested that bottom, middle, and top one-third reading comprehension achievement student groups be identified, described, and compared. These as well as other useful analyses, have been done selectively in the preceding analytic sections. The present section gives additional information describing and contrasting the top, middle, and bottom one-third reading groups.

The bottom one-third reading group had a much greater proportion of adversely affected students (24.8%) than did the top one-third reading group (2.0%). Nearly two-thirds of all adversely affected students (62.9%) were in the bottom one-third reading group, compared with only

one-fourth (25.1%) of the non-adversely affected student group. This is consistent with other information presented elsewhere on adversely affected students.

With respect to race, a significantly greater proportion of the black students were found in the lowest one-third (31.7%) than white students (22.6%). Likewise, a lesser proportion of blacks were found (20.6%) in the top one-third group than were whites (32.5%). For each racial group except for blacks and Hispanics, a greater percent of the students were in the top one-third reading group than in the bottom one-third. This was true for both males and females with one exception. For male native Americans, there were exactly 20% (13) of the students in both the top and bottom one-third reading achievement groups. These findings show that more teaching/learning work needs to be done to raise the reading achievement of blacks and Hispanics and is consistent with other research on this topic.

For those in the top one-third group in terms of their spring, 1985 reading comprehension score (posttest), they gained significantly more in their reading achievement during the year than did those who were in the bottom one-third posttest group. It is quite comprehensible to find that those who gained more in reading achievement also ended up at a higher reading achievement level.

To this point in this present study, organizational dimensions have only been lightly touched. There are significant differences between building types, grade levels, and geographic/organizational clusters with respect to student reading comprehension achievement.

Only in the elementary schools did more students achieve well enough to place in the top one-third group vs. the bottom one-third group (27.7% vs. 24.9%). Special schools and institutions (magnet schools, and the like) had 22.8% of their students in the top one-third group vs. 28.7% in the bottom one-third group, followed by junior high schools with 18.6% vs. 33.8%, and senior high schools with 18.1% vs. 38.2%.

A further examination of one-third groups was done by grade level. A greater proportion of students were in the top one-third reading group than in the bottom one-third reading group at grades 1, 2, 3, and 6. The worst results came in grade 11. In grade eleven 43.3% of the students scored in the bottom one-third, with only 13.5% scoring in the top one-third in terms of reading comprehension.

Although it is interesting and useful to view reading achievement on a citywide basis by race, sex, adversely affected status, building type, grade level, and the like, it is equally interesting and useful to examine differences between organizational clusters and between buildings. It has been shown in preceding analyses that there are significant differences in reading achievement between schools, and within each building level as well as between building levels by school (See Appendix A). In this present analysis it was found that there is also a significant difference between the geographically based (rezone) organizational clusters in terms of the proportion of students falling within the bottom, middle, and top reading achievement groups. The Collinwood and Kennedy-Marshall clusters had a greater proportion of their students placing in the top one-third group than in the bottom one-third group (905 for 27.0% vs. 805 for 24.0%, and 2319 for 28.5% vs. 1921 for

23.6%, respectively). Each of the other clusters had proportionately more students in the bottom one-third reading group than in the top third. See Appendix C for more statistical detail.

These types of findings suggest that strategies for reading improvement be focused on organizational divisions and units such as building level, grade level, organizational clusters, and specific school buildings) as well as on certain student types based on such student characteristics as race, sex, and adversely affected status.

Project Perform

Overall, the reading vocabulary gains as well as the reading comprehension gains were greater for students in Project Perform elementary and junior high schools than in the remaining schools at those same levels (2.86 NCE's vs. .19 NCE, and .08 vs. -.45 NCE, respectively).

Although the average pretest score for Project Perform students was lower (49.38 NCE's vs. 49.57 NCE's), the average posttest score for Project Perform school students was higher (49.00 NCE's vs. 48.53 NCE's). This suggests that the various staff development efforts in Project Perform schools resulted in a somewhat greater overall school effectiveness as indicated by student reading achievement gain scores. The student body represented by this test data in the Project Perform schools is 51.7% male and 48.3% female, in contrast to 52.4% male and 47.6% female in the remaining schools at comparable grade levels. Race composition comparisons between Project Perform and non-Project Perform schools is: 72.8% vs. 70.2% for blacks, 25.9% vs. 25.1% for whites, 1.0% vs. 4.1% for Hispanics, .2% vs. .4% for Asians, and .1% vs. .2% for native Americans.

The initiatives taken in Project Perform to achieve more effective schools justifies cautious optimism. This wholistics approach for improving the quality of education on a building by building basis deserves further trial and refinement. The term "cautious optimism" was used because it may be found that this approach may yield the desired results in some buildings but not in others, for a variety of reasons. If this becomes the case, then decision-makers should be open to accommodating this information rather than opting for either collapsing the whole project or forcing it on schools where it is not yielding results.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

There was not an overall improvement in normed reading comprehension scores for the 1984-1985 school year. The average student in the Cleveland City Schools maintained but did not significantly improve his/her reading achievement position relative to comparable students in a national sample. This means that the average Cleveland student progressed and grew in reading comprehension through the school year at a normal rate, but not at the above average rate which would enable the district to achieve its goal of "catching up" in several crucial areas.

The average reading comprehension score of the adversely affected student remained below the 33rd percentile in the Spring of 1985, in contrast to that of the non-adversely affected student which on an average was slightly above the 50th percentile. Progress through the 1984-1985 school year for both groups was about average. This means that the adversely affected group during 1984-1985 was not making the significant gains in reading comprehension which was and is a key district goal.

The Asian and Pacific Islander racial group scored the highest average pretest, posttest, and gain scores; the Hispanics and blacks the lowest. The average "gain" (change--i.e., posttest minus pretest) score for white students was more favorable than for blacks in every elementary grade; but more favorable for blacks in every secondary grade except grade 10.

It was true for each racial group that those having better reading comprehension achievement scores also had a higher average daily attendance rate. This was also true for both male and female students. Asians and Pacific Islanders, followed by blacks, were the only two racial groups whose average daily attendance (ADA) rate was above the system average, followed by Hispanics, native Americans, and finally whites with the worst ADA rate.

With respect to sex, a significantly greater proportion of girls than boys were found in the top one-third reading group, and a significantly smaller proportion of girls than boys was found in the bottom one-third group. However, this was consistently found true only for the black and white racial groups. It was also found that for these same two racial groups the proportion of males in the adversely affected group was greater than in the non-adversely affected group. Proportionately more boys than girls either progressed or regressed exceptionally during 1984-1985 with respect to their reading comprehension position relative to their Cleveland City School peers. On the other hand, girls were more likely to have simply maintained their relative position with respect to reading comprehension achievement.

Students in seven of the twelve grades had an average reading comprehension gain above the national norm for their grade, but the system-wide average gain/change score for all grades was slightly negative. About the same number of students moved from above the 33rd percentile to below as moved from below to above for every building level and type except in the junior high schools--where over 25% more moved from

above to below than from below to above the 33rd percentile. Significant differences were found between schools in all levels and types of buildings. The bulk of these net negative to neutral results in the school district can be attributed primarily to the twenty schools that had over three students moving from above to below the 33rd percentile for every two students who moved from below to above.

For the sixth straight year in a row there has been a significant drop in average CTBS Reading Comprehension NCE scores from grade three to grade four, grade six to grade seven, and from grade nine to grade eleven. Each of these represents an articulation and transition period for students from one building level to another.

Various other top, middle, to bottom one-third reading comprehension achievement group comparisons were made. The bottom one-third reading group had a significantly greater proportion of adversely affected students, as well as black and Hispanic students. Understandably, those students who ended the 1984-1985 school year in the top one-third reading group also tended to be those students who had progressed the most in reading comprehension during the school year. Only in the elementary schools did more students place in the top one-third than in the bottom one-third reading group, followed by special schools, junior high schools, and finally senior high schools with the worst normed reading performance record. In this respect, grades 1, 2, 3, and 6 performed best, with the worst results coming from grade 11. The Collinwood and Kennedy-Marshall clusters were the only geographic/ organizational clusters having a greater proportion of their students placing in the top one-third group than in the bottom one-third group.

The reading vocabulary gains as well as the reading comprehension gains were somewhat greater for students in Project Perform elementary and junior high schools than in the remaining schools at those same levels. This suggests that the various staff development efforts in Project Perform schools resulted in a somewhat greater overall school effectiveness as indicated by student reading achievement gain scores. However, it is important to recognize that there were significant differences in performance levels between Project Perform schools, as well as between the non-Project Perform schools.

Recommendations

Recommendations are derived from the findings of this study in conjunction with prior findings and a review/assimilation of the literature. Several of these recommendations are similar to prior recommendations, and several are new.

1. Increased effectiveness of articulation and transition programs, especially from grades three to four, and six to seven are needed. These efforts might prove to be feasible solutions for maintaining or even improving normed student reading achievement at these points of passage where currently there is evidence of continuing and significant performance decline. The Office of Reading, English/Language Arts and School Building Administrators should identify strategies directed at ameliorating the significant decline in standardized reading achievement scores in grades four and seven in particular. Those strategies identified should be implemented and evaluated at the building level. Corrective actions based upon evaluation results should be documented.

2. Procedures to improve monitoring of student progress and flexibility in providing remediation in the early grades is critical to permanent elimination of cumulative deficits which have been typical problems for black students in the later grades.

   a. The Office of Reading, English/Language Arts and School Building Administrators should identify strategies directed at decreasing the percent of students not promoted at all grade levels, particularly at the elementary level. Those strategies identified should be implemented and evaluated at the building level. Corrective actions based upon evaluation results should be documented.

   b. The Office of Reading, English/Language Arts; the Supportive Services Department; and School Building Administrators should identify strategies directed at reducing the percent of students who are absent at all grade levels, particularly in the secondary grades. The attendance rates of all students (particularly of secondary--especially senior high school, white--especially male, low performance--especially adversely affected students) need to be improved. Those strategies identified should be implemented and evaluated at the building level. Corrective actions based upon evaluation results should be documented.

   c. The Office of Reading, English/Language Arts; the Supportive Services Department; and the School Building Administrators should identify strategies directed at decreasing the percent of students who drop out of school, particularly at the secondary level. Those strategies identified should be implemented and evaluated at the building level. Corrective actions based upon evaluation results should be documented.

3. Attention to the unique educational needs of Hispanic students is also crucial, given the trends in their performance. Questions relating to program emphasis on meeting the needs of Hispanics to maintain their cultural and language heritage on the one hand, and the needs of Hispanics to educate for successful transition into the cultural and occupational mainstream of a predominantly English language based culture on the other, must be adequately framed and answered. The Office of Reading, English/Language Arts; the Bilingual and Multicultural Education Office; and School Building Administrators should identify

strategies directed at raising the average reading achievement of Hispanic students to that of the average achievement of white students in the district. Those strategies identified should be implemented and evaluated at the building level. Corrective actions based upon evaluation results should be documented.

4. More effective ways of accelerating the academic achievement in reading of the adversely affected students, now primarily in the secondary schools, must be found and implemented. The Office of Reading, English/Language Arts and School Building Administrators should identify strategies directed at advancing the average reading comprehension achievement scores of the over 9,000 remaining adversely affected students to a point significantly above the current plateau of below the 33rd percentile.

5. The twenty schools specifically identified in Appendix A as having the most deficient student reading progress should be specifically earmarked for supervisory and administrative attention, assistance, and corrective action with respect to their curricular and instructional (teaching/learning) delivery system. The Office of Reading, English/Language Arts, and Regional Superintendents in concert with the identified School Building Administrators should identify, implement and monitor the strategies for improving the overall reading achievement progress of the students in these twenty most subperforming schools. Those strategies identified should be implemented and evaluated at both the building and cluster levels. Corrective actions based upon evaluation results should be documented.

6. Although these results show the school district has been having some success with the adversely affected group until this current year, the apparently permanent leveling off of achievement of the non-adversely affected group suggests that the district continue to look for ways to challenge the latter group to excel. In the effort to reduce reading disparities, services to "average" and "above average" performing students should not be underemphasized. The Office of Reading, English/Language Arts; the Major Work Honor Office of the Special Education Division; and School Building Administrators should jointly develop strategies directed at: a) increasing the percent of students whose reading achievement is above the national average, b) increasing the system-wide average reading comprehension score of those students who score above the average, and c) increasing the amount and quality of curriculum offerings for above average students, particularly for the gifted. Those strategies identified should be implemented and evaluated at the building level. Corrective Actions based upon evaluation results should be documented.

7. The Division of Testing and Evaluation in the Department of Research and Analysis; together with the Office of Reading, English/Language Arts; as well as building administrators, teachers, and parent/community representatives, should continually and thoroughly review and evaluate tests for the purpose of upgrading all tests administered city-wide in terms of: resolving the wide range of technical validity and reliability issues, maintaining secure and efficient test administration procedures, adequately disseminating test results information, as well as resolving the practical issues of maximizing teacher and district

planning and instructional use of test results, with sufficient parental understanding of student assessments as a final important concern. Those strategies identified should have their implementation and evaluation coordinated by the Division of Testing and Evaluation in the Department of Research and Evaluation. Corrective actions based upon evaluation results should be documented.

APPENDIX A

ELAPSED TIME REQUIRED.. 570.67 SECONDS

```
741 CROSSTABS     VARIABLES = PARGROUP (1,2) TSCHNO (800,939) CSCHLEV (3,6) /
742               TABLES    = PARGROUP BY CSCHLEV / PARGROUP BY TSCHNO BY CSCHLEV
743 OPTIONS       9
744 STATISTICS    ALL
745 COMMENT       PARITY STUDY RELATED RUNS

***** CROSSTABS  PROBLEM REQUIRES     4512 BYTES WORKSPACE NOT INCLUDING VALUE LABELS *****
***** GIVEN WORKSPACE ALLOWS FOR 32767 LABELLED VALUES *****
```

NOTE:

. The "+" symbol is placed above a school's name and building number in the following crosstabulation grid network if more than 60% of the school's total transition students moved from below the 33rd percentile on the 1984-1985 pretest to above the 33rd percentile on the posttest. This is a very favorable outcome. Transition students are the sum total of all students who, from pretest to posttest, moved from above to below, or below to above, the 33rd percentile (cut score).

. The "*" symbol is placed above a school's name and building number if more than 60% of the school's total transition students moved from above the 33rd percentile on the 1984-1985 pretest to below the 33rd percentile on the posttest. This is not a favorable outcome.

* * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RDAILE BY CSCHLEV
* PAGE 1 OF 1

PARGROUP	COUNT / ROW PCT / COL PCT / TOT PCT	CSCHLEV: PUBLIC ELEMENTAR 3	PUBLIC JUNIOR HS 4	PUBLIC SENIOR HS 5	SPECIAL SCHSCINS 6	ROW TOTAL
1 BELOW TO ABOVE 3	COUNT	2838	1155	870	244	5107
	ROW PCT	55.6	22.6	17.0	4.8	48.2
	COL PCT	49.8	43.5	49.5	49.8	
	TOT PCT	26.8	10.9	8.2	2.3	
2 ABOVE TO BELOW 3	COUNT	2858	1500	889	246	5493
	ROW PCT	52.0	27.3	16.2	4.5	51.8
	COL PCT	50.2	56.5	50.5	50.2	
	TOT PCT	27.0	14.2	8.4	2.3	
COLUMN TOTAL		5696	2655	1759	490	10600
		53.7	25.0	16.6	4.6	100.0

RAW CHI SQUARE = 31.09911 WITH 3 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.05417
CONTINGENCY COEFFICIENT = 0.05409
LAMBDA (ASYMMETRIC) = 0.0 WITH PARGROUP DEPENDENT. = 0.0 WITH CSCHLEV DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00212 WITH PARGROUP DEPENDENT. = 0.00131 WITH CSCHLEV DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00162
KENDALL'S TAU B = 0.02018. SIGNIFICANCE = 0.0137
KENDALL'S TAU C = 0.02244. SIGNIFICANCE = 0.0137
GAMMA = 0.03628
SOMERS'S D (ASYMMETRIC) = 0.01813 WITH PARGROUP DEPENDENT. = 0.02247 WITH CSCHLEV DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.02007
ETA = 0.05415 WITH PARGROUP DEPENDENT. = 0.01112 WITH CSCHLEV DEPENDENT.
PEARSON'S R = 0.01161 SIGNIFICANCE = 0.1160

NUMBER OF MISSING OBSERVATIONS = 56803

APPENDIX A (Continued)

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 1 OF 9

PARGROUP	TSCHNO: COUNT / ROW PCT / COL PCT / TOT PCT	016 A.J. RICKOFF K 851	020 ANTH D.WAYNE K 852	023 ARTE MU WARD K 853	036 B.FR ANKLIN K 854	064 BUHR ER K 855	086 CLAR K K 856	107 CRAN WOOD K 857	109 D.E. MORGAN K 858	165 E.B. DESAUZE K 859	171 F.H. PARKWAY K 860	ROW TOTAL
1 BELOW TO ABOVE 3		35 1.2 66.0 0.6	56 2.0 46.3 1.0	17 0.6 34.7 0.3	68 2.4 51.5 1.2	34 1.2 63.0 0.6	31 1.1 45.6 0.5	23 0.8 44.2 0.4	39 1.4 44.8 0.7	10 0.4 58.8 0.2	36 1.3 48.6 0.6	2838 49.8
2 ABOVE TO BELOW 3		18 0.6 34.0 0.3	65 2.3 53.7 1.1	32 1.1 65.3 0.6	64 2.2 48.5 1.1	20 0.7 37.0 0.4	37 1.3 54.4 0.6	29 1.0 55.8 0.5	48 1.7 55.2 0.8	7 0.2 41.2 0.1	38 1.3 51.4 0.7	2858 50.2
COLUMN TOTAL		53 0.9	121 2.1	49 0.9	132 2.3	54 0.9	68 1.2	52 0.9	87 1.5	17 0.3	74 1.3	5696 100.0

(CONTINUED)

APPENDIX A (Continued)

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY

TSCHNO

PARGROUP	COUNT / ROW PCT / COL PCT / TOT PCT	189 FULLERTON K 861	188 GARFIELD K 862	190 G.W. CARVER K 863	224 GORDON K 864	225 GRACEMOUNT K 865	228 HALLE K 866	301 KENTUCKY K 867	345 M.A. IRELAND K 868	347 M.B. MARTIN K 869	350 M.M. BETHUNE K 870	ROW TOTAL
1 BELOW TO ABOVE 3	COUNT	34	25	40	58	25	37	36	37	46	34	2838
	ROW PCT	1.2	0.9	1.4	2.0	0.9	1.3	1.3	1.3	1.6	1.2	49.8
	COL PCT	51.5	56.8	66.7	51.8	46.3	44.0	48.6	42.5	44.2	64.2	
	TOT PCT	0.6	0.4	0.7	1.0	0.4	0.6	0.6	0.6	0.8	0.6	
2 ABOVE TO BELOW 3	COUNT	32	19	20	54	29	47	38	50	58	19	2858
	ROW PCT	1.1	0.7	0.7	1.9	1.0	1.6	1.3	1.7	2.0	0.7	50.2
	COL PCT	48.5	43.2	33.3	48.2	53.7	56.0	51.4	57.5	55.8	35.8	
	TOT PCT	0.6	0.3	0.4	0.9	0.5	0.8	0.7	0.9	1.0	0.3	
COLUMN TOTAL		66	44	60	112	54	84	74	87	104	53	5696
		1.2	0.8	1.1	2.0	0.9	1.5	1.3	1.5	1.8	0.9	100.0

(CONTINUED)

APPENDIX A (Continued)

* C R O S S T A B U L A T I O N O F *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RDXILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 3 OF 9

PARGROUP	COUNT / ROW PCT / COL PCT / TOT PCT	352 MCKI INLEY K 871	360 MEMP HIS K 872	464 MT.P LEASANTK 874	412 N.HA WTHORNEK 875	426 O.H. PERRY K 876	436 ORCH ARD K 877	452 PAUL REVEREK 878	525 STEP .E.HOWEK 879	548 UNIO N K 880	560 WALT ON K 881	ROW TOTAL
1 BELOW TO ABOVE 3	COUNT	26	38	57	21	76	38	39	35	37	49	2838
	ROW PCT	0.9	1.3	2.0	0.7	2.7	1.3	1.4	1.2	1.3	1.7	49.8
	COL PCT	46.4	73.1	58.8	53.8	69.7	47.5	40.2	44.9	43.5	53.8	
	TOT PCT	0.5	0.7	1.0	0.4	1.3	0.7	0.7	0.6	0.6	0.9	
2 ABOVE TO BELOW 3	COUNT	30	14	40	18	33	42	58	43	48	42	2858
	ROW PCT	1.0	0.5	1.4	0.6	1.2	1.5	2.0	1.5	1.7	1.5	50.2
	COL PCT	53.6	26.9	41.2	46.2	30.3	52.5	59.8	55.1	56.5	46.2	
	TOT PCT	0.5	0.2	0.7	0.3	0.6	0.7	1.0	0.8	0.8	0.7	
COLUMN TOTAL		56	52	97	39	109	80	97	78	85	91	5696
		1.0	0.9	1.7	0.7	1.9	1.4	1.7	1.4	1.5	1.6	100.0

(CONTINUED)

APPENDIX A (Continued)

84-65 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 4 OF 9

PARGROUP	COUNT / ROW PCT / COL PCT / TOT PCT	572 WARNIER K 862	592 WATTERSON LKK 883	004 A.ST EVENSONK 884	056 BROOKLAWN K 886	068 LASE K 887	079 C.H. LAKE K 888	156 E.MADISON K 890	166 EUCLID PARKK 891	094 F.ED.CENTER 892	252 LONGFELLOW K 893	ROW TOTAL
1 BELOW TO ABOVE 3		37	81	19	35	40	37	29	48	43	37	
		1.3	2.9	0.7	1.2	1.4	1.3	1.0	1.7	1.5	1.3	2838
		44.0	50.9	51.4	56.5	44.0	44.0	41.4	50.0	41.0	53.6	49.8
		0.6	1.4	0.3	0.6	0.7	0.6	0.5	0.8	0.8	0.6	
2 ABOVE TO BELOW 3		47	78	18	27	51	47	41	48	62	32	
		1.6	2.7	0.6	0.9	1.8	1.6	1.4	1.7	2.2	1.1	2858
		56.0	49.1	48.6	43.5	56.0	56.0	58.6	50.0	59.0	46.4	50.2
		0.8	1.4	0.3	0.5	0.9	0.8	0.7	0.8	1.1	0.6	
	COLUMN TOTAL	84	159	37	62	91	84	70	96	105	69	5696
		1.5	2.8	0.6	1.1	1.6	1.5	1.2	1.7	1.8	1.2	100.0

(CONTINUED)

APPENDIX A (Continued)

CROSSTABULATION OF PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR.. CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY

PARGROUP	TSCHNO COUNT / ROW PCT / COL PCT / TOT PCT	894 CLEMENTK	895 EKLING K	896 S PARK	897 FULTON K	898 ONT K	899 .BROBSTK	900 PARK K	901 .HARPERK	902 OW K	903 YETTE K	ROW TOTAL
BELOW TO ABOVE 3	1	12	55	57	35	72	39	43	52	43	44	2838
		0.4	1.9	2.0	1.2	2.5	1.4	1.5	1.8	1.5	1.6	49.8
		99.9	70.5	62.6	49.3	46.8	54.2	46.2	55.3	86.0	57.1	
		0.2	1.0	1.0	0.6	1.3	0.7	0.8	0.9	0.8	0.8	
ABOVE TO BELOW 3	2	12	23	34	36	82	33	50	42	7	33	2858
		0.5	0.8	1.2	1.3	2.9	1.2	1.7	1.5	0.2	1.2	50.2
		55.6	29.5	37.4	50.7	53.2	45.8	53.8	44.7	14.0	42.9	
		0.3	0.4	0.6	0.6	1.4	0.6	0.9	0.7	0.1	0.6	
COLUMN TOTAL		27	78	91	71	154	72	93	94	50	77	5696
		0.5	1.4	1.6	1.2	2.7	1.3	1.6	1.7	0.9	1.4	100.0

(CONTINUED)

* C R O S S T A B U L A T I O N O F *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RDXILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 6 OF 9

PARGROUP (TSCHNO: COUNT / ROW PCT / COL PCT / TOT PCT)	003 A.A. BENESCHK 904	012 ALMIRA 905	+ 021 A.G.BK DINA 906	041 BOLTK ON 907	636 B.WOODLAND 908	065 CAPTK .A.ROTH 909	* 077 C.DICKENS 910	081 CHARK LES ORR 911	104 CORLK ETT 912	+ 112 DENIK SON 913	ROW TOTAL
1 BELOW TO ABOVE 3	24 0.8 49.0 0.4	35 1.2 50.7 0.6	46 1.6 56.8 0.8	33 1.2 64.7 0.6	29 1.0 53.7 0.5	21 0.7 41.2 0.4	25 0.9 37.3 0.4	19 0.7 48.7 0.3	17 0.6 51.5 0.3	52 1.8 63.4 0.9	2838 49.8
2 ABOVE TO BELOW 3	25 0.9 51.0 0.4	34 1.2 49.3 0.6	35 1.2 43.2 0.6	18 0.6 35.3 0.3	25 0.9 46.3 0.4	30 1.0 58.8 0.5	42 1.5 62.7 0.7	20 0.7 51.3 0.4	16 0.6 48.5 0.3	30 1.0 36.6 0.5	2858 50.2
COLUMN TOTAL	49 0.9	69 1.2	81 1.4	51 0.9	54 0.9	51 0.9	67 1.2	39 0.7	33 0.6	82 1.4	5696 100.0

(CONTINUED)

APPENDIX A (Continued)

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RDXILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 7 OF 9

PARGROUP (COUNT / ROW PCT / COL PCT / TOT PCT) \ TSCHNO	124 DIKE K 914	130 D.MA CARTHURK 915	146 EAST CLARK K 916	206 GIDD INGS K 917	* 240 MARY EY RICEK 918	270 IOWA -MAPLE K 920	* 294 JOHN W.RAPERK 921	* 295 J.F. LANDIS K 922	338 L.AG ASSIZ K 923	339 L.PA STEUR K 924	ROW TOTAL
1 BELOW TO ABOVE 3	24	5	17	17	31	26	19	28	12	41	2838
	0.8	0.2	0.6	0.6	1.1	0.9	0.7	1.0	0.4	1.4	49.8
	48.0	41.7	45.9	44.7	33.3	45.6	33.9	34.1	41.4	48.2	
	0.4	0.1	0.3	0.3	0.5	0.5	0.3	0.5	0.2	0.7	
2 ABOVE TO BELOW 3	26	7	20	21	62	31	37	54	17	44	2858
	0.9	0.2	0.7	0.7	2.2	1.1	1.3	1.9	0.6	1.5	50.2
	52.0	58.3	54.1	55.3	66.7	54.4	66.1	65.9	58.6	51.8	
	0.5	0.1	0.4	0.4	1.1	0.5	0.6	0.9	0.3	0.8	
COLUMN TOTAL	50	12	37	38	93	57	56	82	29	85	5696
	0.9	0.2	0.6	0.7	1.6	1.0	1.0	1.4	0.5	1.5	100.0

(CONTINUED)

APPENDIX A (Continued)

84-65 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAIIKAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE(1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 8 OF 9

TSCHNO

PARGROUP (COUNT / ROW PCT / COL PCT / TOT PCT)	353 M.C. SELTZERK S 925	368 MILE 926	376 M.ST K ANDISH 927	386 M.CL K EAVELANK 928	* 396 MOUN D 929	* 400 MT.A K UBURN 930	451 P.L. K DUNBAR 931	485 RIVE K RSIDE 932	* 487 R.G. K JONES 933	500 SCRA K NTON K 934	ROW TOTAL
1 BELOW TO ABOVE 3	26	35	30	21	16	26	34	8	2	22	2838
	0.9	1.2	1.1	0.7	0.6	0.9	1.2	0.3	0.1	0.8	49.8
	42.6	58.3	40.5	37.5	38.1	56.5	56.7	44.4	25.0	42.3	
	0.5	0.6	0.5	0.4	0.3	0.5	0.6	0.1	0.0	0.4	
2 ABOVE TO BELOW 3	35	25	44	35	26	20	26	10	6	30	2858
	1.2	0.9	1.5	1.2	0.9	0.7	0.9	0.3	0.2	1.0	50.2
	57.4	41.7	59.5	62.5	61.9	43.5	43.3	55.6	75.0	57.7	
	0.6	0.4	0.8	0.6	0.5	0.4	0.5	0.2	0.1	0.5	
COLUMN TOTAL	61	60	74	56	42	46	60	18	8	52	5696
	1.1	1.1	1.3	1.0	0.7	0.8	1.1	0.3	0.1	0.9	100.0

(CONTINUED)

APPENDIX A (Continued)

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 3 PUBLIC ELEMENTARY
* PAGE 9 OF 9

PARGROUP	TSCHNO COUNT ROW PCT COL PCT TOT PCT	1550 VALL EYVIEW K 935	596 HAVE RLY 936	622 WM.L K .BRYANT 937	638 WDLA K ND HILL 938	K 939	ROW TOTAL
1 BELOW TO ABOVE 3		12 0.4 75.0 0.2	34 1.2 45.3 0.6	24 0.8 45.3 0.4	28 1.0 54.9 0.5	4 0.1 25.0 0.1	2838 49.8
2 ABOVE TO BELOW 3		4 0.1 25.0 0.1	41 1.4 54.7 0.7	29 1.0 54.7 0.5	23 0.8 45.1 0.4	12 0.4 75.0 0.2	2858 50.2
COLUMN TOTAL		16 0.3	75 1.3	53 0.9	51 0.9	16 0.3	5696 100.0

2 OUT OF 170 (1.2%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 3.986
RAW CHI SQUARE = 203.76395 WITH 84 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.18914
CONTINGENCY COEFFICIENT = 0.18584
LAMBDA (ASYMMETRIC) = 0.14271 WITH PARGROUP DEPENDENT. = 0.00072 WITH TSCHNO DEPENDENT.
LAMBDA (SYMMETRIC) = 0.04884
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02662 WITH PARGROUP DEPENDENT. = 0.00425 WITH TSCHNO DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00732
KENDALL'S TAU B = 0.02266. SIGNIFICANCE = 0.0188
KENDALL'S TAU C = 0.03183. SIGNIFICANCE = 0.0188
CONDITIONAL GAMMA = 0.03226
SOMERS'S D (ASYMMETRIC) = 0.01614 WITH PARGROUP DEPENDENT. = 0.03183 WITH TSCHNO DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.02142
ETA = 0.18915 WITH PARGROUP DEPENDENT. = 0.04174 WITH TSCHNO DEPENDENT.
PEARSON'S R = 0.02991 SIGNIFICANCE = 0.0120

64-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 4 PUBLIC JUNIOR HS
* PAGE 1 OF 3

PARGROUP	TSCHNO / COUNT / ROW PCT / COL PCT / TOT PCT	+ 355 MART IN L.KIN 820	* 005 A.B. HART 821	009 AL. HAMILTON 822	024 AUDU BON 823	066 C.F. SHULER 824	* 076 CENT RAL 825	* 080 C.A. MOONEY 826	078 C.H. ELIOT 827	090 C.E. WESTROPP 828	164 EMP RE 829	ROW TOTAL
BELOW TO ABOVE 3	1	86	46	46	102	64	45	52	44	48	57	1155
		7.4	4.0	4.0	8.8	5.5	3.9	4.5	3.8	4.2	4.9	43.5
		67.2	35.9	43.0	59.3	45.4	31.9	31.9	48.4	40.3	45.6	
		3.2	1.7	1.7	3.8	2.4	1.7	2.0	1.7	1.8	2.1	
ABOVE TO BELOW 3	2	42	82	61	70	77	96	111	47	71	68	1500
		2.8	5.5	4.1	4.7	5.1	6.4	7.4	3.1	4.7	4.5	56.5
		32.8	64.1	57.0	40.7	54.6	68.1	68.1	51.6	59.7	54.4	
		1.6	3.1	2.3	2.6	2.9	3.6	4.2	1.8	2.7	2.6	
COLUMN TOTAL		128	128	107	172	141	141	163	91	119	125	2655
		4.8	4.8	4.0	6.5	5.3	5.3	6.1	3.4	4.5	4.7	100.0

(CONTINUED)

APPENDIX A (Continued)

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE(1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 4 PUBLIC JUNIOR HS
* PAGE 2 OF 3

PARGROUP	TSCHNO: COUNT / ROW PCT / COL PCT / TOT PCT	1172 F.D. ROOSEVEL 830 *	233 H.E. DAVIS 831	326 LINC OLN 832 *	343 M. S PELLACY 833	411 NATH AN HALL 835 *	415 N.D. BAKER 836	448 PAT. HENRY 837	482 R. J AMISON 838	536 T.JE FFERSON 839	279 J.M. GALLAGHE 840 *	ROW TOTAL
1 BELOW TO ABOVE 3	COUNT	40	43	43	67	67	36	40	48	48	59	1155
	ROW PCT	3.5	3.7	3.7	5.8	5.8	3.1	3.5	4.2	4.2	5.1	43.5
	COL PCT	39.6	47.8	32.8	43.2	39.0	48.0	52.6	56.5	44.4	37.1	
	TOT PCT	1.5	1.6	1.6	2.5	2.5	1.4	1.5	1.8	1.8	2.2	
2 ABOVE TO BELOW 3	COUNT	61	47	88	88	105	39	36	37	60	100	1500
	ROW PCT	4.1	3.1	5.9	5.9	7.0	2.6	2.4	2.5	4.0	6.7	56.5
	COL PCT	60.4	52.2	67.2	56.8	61.0	52.0	47.4	43.5	55.6	62.9	
	TOT PCT	2.3	1.8	3.3	3.3	4.0	1.5	1.4	1.4	2.3	3.8	
COLUMN TOTAL		101	90	131	155	172	75	76	85	108	159	2655
		3.8	3.4	4.9	5.8	6.5	2.8	2.9	3.2	4.1	6.0	100.0

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APPENDIX A (Continued)

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BOARD OF EDUCATION-CLEVELAND CITY SCHOOL DISTRICT                                   07/23/85        PAGE  560
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE    PRPSTAPR (CREATION DATE = 07/23/85)    1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * *   C R O S S T A B U L A T I O N   O F   * * * * * * * * * * * * * * * * * *
     PARGROUP  TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE       BY  TSCHNO     POST-T --SCHOOL NUMBER
CONTROLLING FOR..
     CSCHLEV                                                  VALUE..     4    PUBLIC JUNIOR HS
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *  PAGE  3 OF  3

                  TSCHNO
          COUNT  I   *                  *
        ROW PCT  I615 W. Y 616 WILB 624 WILL 802 CLEV 396 MOUN    ROW
        COL PCT  IOUNG     .WRIGHT  SON      .SCIENCE D        K  TOTAL
        TOT PCT  I   841  I   842  I   844  I   850  I   929  I
PARGROUP         --------I--------I--------I--------I--------I
                1  I     8  I    44  I    20  I     1  I     1  I   1155
  BELOW TO ABOVE 3 I   0.7  I   3.8  I   1.7  I   0.1  I   0.1  I   43.5
                   I  33.3  I  41.5  I  35.7  I 100.0  I 100.0  I
                   I   0.3  I   1.7  I   0.8  I   0.0  I   0.0  I
                  -I--------I--------I--------I--------I--------I
                2  I    16  I    62  I    36  I     0  I     0  I   1500
  ABOVE TO BELOW 3 I   1.1  I   4.1  I   2.4  I   0.0  I   0.0  I   56.5
                   I  66.7  I  58.5  I  64.3  I   0.0  I   0.0  I
                   I   0.6  I   2.3  I   1.4  I   0.0  I   0.0  I
                  -I--------I--------I--------I--------I--------I
           COLUMN       24      106       56        1        1     2655
            TOTAL      0.9      4.0      2.1      0.0      0.0    100.0

    4 OUT OF    50 (  8.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY =  0.435
RAW CHI SQUARE =     93.76930 WITH     24 DEGREES OF FREEDOM.  SIGNIFICANCE =  0.0000
CRAMER'S V =  0.18793
CONTINGENCY COEFFICIENT =  0.18470
LAMBDA (ASYMMETRIC) =  0.08052 WITH PARGROUP DEPENDENT.          =  0.01651 WITH TSCHNO   DEPENDENT.
LAMBDA (SYMMETRIC) =  0.03683
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.02614 WITH PARGROUP DEPENDENT.          =  0.00581 WITH TSCHNO   DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.00951
KENDALL'S TAU B =  0.03816.    SIGNIFICANCE =  0.0093
KENDALL'S TAU C =  0.05221.    SIGNIFICANCE =  0.0093
CONDITIONAL GAMMA =  0.05568
SOMERS'S D (ASYMMETRIC) =  0.02742 WITH PARGROUP DEPENDENT.          =  0.05311 WITH TSCHNO   DEPENDENT.
SOMERS'S D (SYMMETRIC) =  0.03617
ETA =  0.18795 WITH PARGROUP DEPENDENT.          =  0.0      WITH TSCHNO   DEPENDENT.
PEARSON'S R = 0.03444  SIGNIFICANCE =  0.0380
```

APPENDIX A (Continued)

FILE PRPSTAPR (CREATION DATE = 07/23/85) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 5 PUBLIC SENIOR HS
* PAGE 1 OF 2

TSCHNO

PARGROUP	COUNT / ROW PCT / COL PCT / TOT PCT	144 EAST HIGH 802	161 EAST TECH 803	* 220 GLEN VILLE 804	+ 273 J.F. RHODES 805	* 276 JOHN ADAMS 806	284 JOHN HAY 807	285 J.F. KENNEDY 808	292 J.MA RSHALL 809	330 LINC OLN-W. 810	512 SOUT H 812	ROW TOTAL
1 BELOW TO ABOVE 3		47	58	39	50	60	67	69	135	75	65	870
		5.4	6.7	4.5	5.7	6.9	7.7	7.9	15.5	8.6	7.5	49.5
		41.6	48.3	32.5	60.2	39.7	58.3	45.1	56.0	47.5	42.8	
		2.7	3.3	2.2	2.8	3.4	3.8	3.9	7.7	4.3	3.7	
2 ABOVE TO BELOW 3		66	62	81	33	91	48	84	106	83	87	889
		7.4	7.0	9.1	3.7	10.2	5.4	9.4	11.9	9.3	9.8	50.5
		58.4	51.7	67.5	39.8	60.3	41.7	54.9	44.0	52.5	57.2	
		3.8	3.5	4.6	1.9	5.2	2.7	4.8	6.0	4.7	4.9	
	COLUMN TOTAL	113	120	120	63	151	115	153	241	158	152	1759
		6.4	6.8	6.8	4.7	8.6	6.5	8.7	13.7	9.0	8.6	100.0

(CONTINUED)

APPENDIX A (Continued)

* C R O S S T A B U L A T I O N O F *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RD%ILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV VALUE.. 5 PUBLIC SENIOR HS
* PAGE 2 OF 2

TSCHNO COUNT ROW PCT COL PCT TOT PCT	1612 WEST TECH 813	096 COLL INWOOD 814	024 AUDU BON 623	ROW TOTAL
PARGROUP 1 BELOW TO ABOVE 3	68 7.8 46.9 3.9	137 15.7 66.2 7.8	0 0.0 0.0 0.0	870 49.5
2 ABOVE TO BELOW 3	77 8.7 53.1 4.4	70 7.9 33.8 4.0	1 0.1 100.0 0.1	889 50.5
COLUMN TOTAL	145 8.2	207 11.8	1 0.1	1759 100.0

2 OUT OF 26 (7.7%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.495
RAW CHI SQUARE = 62.60936 WITH 12 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.18866
CONTINGENCY COEFFICIENT = 0.18539
LAMBDA (ASYMMETRIC) = 0.15172 WITH PARGROUP DEPENDENT. = 0.00132 WITH TSCHNO DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05611
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02618 WITH PARGROUP DEPENDENT. = 0.00741 WITH TSCHNO DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01155
KENDALL'S TAU B = -0.07615. SIGNIFICANCE = 0.0001
KENDALL'S TAU C = -0.10274. SIGNIFICANCE = 0.0001
CONDITIONAL GAMMA = -0.11250
SOMERS'S D (ASYMMETRIC) = -0.05644 WITH PARGROUP DEPENDENT. = -0.10275 WITH TSCHNO DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.07286
ETA = 0.18866 WITH PARGROUP DEPENDENT. = 0.0 WITH TSCHNO DEPENDENT.
PEARSON'S R = -0.08923 SIGNIFICANCE = 0.0001

APPENDIX A (Continued)

* CROSSTABULATION OF *
PARGROUP TYPE OF PRE TO POST MOVE ACROSS 33RDATILE BY TSCHNO POST-T --SCHOOL NUMBER
CONTROLLING FOR..
CSCHLEV
* VALUE.. 6 SPECIAL SCHS&INST.
* PAGE 1 OF 1

	TSCHNO								
COUNT / ROW PCT / COL PCT / TOT PCT	1803 LAN-PUB.SER.	349 M.S. HAYES	275 JANE ADDAMS	026 AVIA TION	804 HEAL TH CAR.1	164 EMPI KE	801 CLEV .ART&-66	802 CLEV .SCIENCE	ROW TOTAL
PARGROUP									
1	30	14	35	33	22	1	61	48	244
BELOW TO ABOVE 3	12.3	5.7	14.3	13.5	9.0	0.4	25.0	19.7	49.8
	46.9	46.7	39.8	55.0	53.7	100.0	46.6	64.0	
	6.1	2.9	7.1	6.7	4.5	0.2	12.4	9.8	
2	34	16	53	27	19	0	70	27	246
ABOVE TO BELOW 3	13.8	6.5	21.5	11.0	7.7	0.0	28.5	11.0	50.2
	53.1	53.3	60.2	45.0	46.3	0.0	53.4	36.0	
	6.9	3.3	10.8	5.5	3.9	0.0	14.3	5.5	
COLUMN TOTAL	64	30	88	60	41	1	131	75	490
	13.1	6.1	18.0	12.2	8.4	0.2	26.7	15.3	100.0

2 OUT OF 16 (12.5%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.498
RAW CHI SQUARE = 12.37503 WITH 7 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0889
CRAMER'S V = 0.15892
CONTINGENCY COEFFICIENT = 0.15695
LAMBDA (ASYMMETRIC) = 0.12705 WITH PARGROUP DEPENDENT. = 0.0 WITH TSCHNO DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05141
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01895 WITH PARGROUP DEPENDENT. = 0.00709 WITH TSCHNO DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01028
KENDALL'S TAU B = -0.08301. SIGNIFICANCE = 0.0186
KENDALL'S TAU C = -0.10696. SIGNIFICANCE = 0.0186
CONDITIONAL GAMMA = -0.12827
SOMERS'S D (ASYMMETRIC) = -0.06443 WITH PARGROUP DEPENDENT. = -0.10696 WITH TSCHNO DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.08042
ETA = 0.15893 WITH PARGROUP DEPENDENT. = 0.05715 WITH TSCHNO DEPENDENT.
PEARSON'S R =-0.05806 SIGNIFICANCE = 0.0998

SUMMARY GAMMAS FOR CROSSTABULATION OF PARGROUP BY TSCHNO
ZERO-ORDER GAMMA = -0.01760
FIRST-ORDER PARTIAL GAMMA = 0.02536

NUMBER OF MISSING OBSERVATIONS = 56803

CROSSTABULATION INDEX

PAGE	TABLE
548	PARGROUP BY CSCHLEV
549	PARGROUP BY TSCHNO BY CSCHLEV

APPENDIX B

FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *

SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.

SEX	T2GRP3 COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TI LE GRP-C 1	MID.33%T ILE GRP- 2	HI 33%TI LE GRP-C 3	ROW TOTAL
MALE	1	7730	10549	5090	23369
		33.1	45.1	21.8	50.4
		56.5	48.5	46.7	
		16.7	22.8	11.0	
FEMALE	2	5954	11191	5820	22965
		25.9	48.7	25.3	49.6
		43.5	51.5	53.3	
		12.9	24.2	12.6	
	COLUMN TOTAL	13684	21740	10910	46334
		29.5	46.9	23.5	100.0

RAW CHI SQUARE = 294.80444 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.07977
CONTINGENCY COEFFICIENT = 0.07952
LAMBDA (ASYMMETRIC) = 0.05974 WITH SEX DEPENDENT. = 0.0 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02885
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00460 WITH SEX DEPENDENT. = 0.00302 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00365
KENDALL'S TAU B = 0.07067. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.07977. SIGNIFICANCE = 0.0000
GAMMA = 0.12483
SOMERS'S D (ASYMMETRIC) = 0.06260 WITH SEX DEPENDENT. = 0.07978 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.07015
ETA = 0.07978 WITH SEX DEPENDENT. = 0.07377 WITH T2GRP3 DEPENDENT.
PEARSON'S R = 0.07378 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21069

APPENDIX B

BEST COPY AVAILABLE

* C R O S S T A B U L A T I O N O F *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
* PAGE 1 OF 1

T2GRP3	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
LO 33%TILE GRP-C	1	7730	5954	13684
		56.5	43.5	29.5
		33.1	25.9	
		16.7	12.9	
MID.33%TILE GRP-	2	10549	11191	21740
		48.5	51.5	46.9
		45.1	48.7	
		22.8	24.2	
HI 33%TILE GRP-C	3	5090	5820	10910
		46.7	53.3	23.5
		21.8	25.3	
		11.0	12.6	
COLUMN TOTAL		23369	22965	4633[illegible]
		50.4	49.6	100.0

RAW CHI SQUARE = 294.80444 WITH 2 DEGREES OF FREEDOM, SIGNIFICANCE = 0.0
CRAMER'S V = 0.07977
CONTINGENCY COEFFICIENT = 0.07951
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT, = 0.05974 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02885
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00302 WITH T2GRP3 DEPENDENT, = 0.00460 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00365
KENDALL'S TAU B = 0.07067, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.07977, SIGNIFICANCE = 0.0000
GAMMA = 0.12483
SOMERS'S D (ASYMMETRIC) = 0.07978 WITH T2GRP3 DEPENDENT, = 0.06260 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.07015
ETA = 0.07377 WITH T2GRP3 DEPENDENT. = 0.07978 WITH SEX DEPENDENT.
PEARSON'S R = 0.07378 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21069

APPENDIX B (Continued)

BEST COPY AVAILABLE

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE FRESTAPH (CREATION DATE = 02/10/86) 1983-84 PRE 1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 1 AMER IND OR ESKIMO
* PAGE 1 OF 1

SEX COUNT ROW PCT COL PCT TOT PCT	MALE 1	FEMALE 2	ROW TOTAL
T2GRP3			
1 LO 33%TILE GRP-C	13 56.5 20.0 11.0	10 43.5 18.9 8.5	23 19.5
2 MID.33%TILE GRP-	39 61.9 60.0 33.1	24 38.1 45.3 20.3	63 53.4
3 HI 33%TILE GRP-C	13 40.6 20.0 11.0	19 59.4 35.8 16.1	32 27.1
COLUMN TOTAL	65 55.1	53 44.9	118 100.0

RAW CHI SQUARE = 3.90780 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1417
CRAMER'S V = 0.18198
CONTINGENCY COEFFICIENT = 0.17904
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT. = 0.11321 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05556
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01643 WITH T2GRP3 DEPENDENT. = 0.02407 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01953
KENDALL'S TAU B = 0.12302, SIGNIFICANCE = 0.0811
KENDALL'S TAU C = 0.13444, SIGNIFICANCE = 0.0811
CONDITIONAL GAMMA = 0.21951
SOMERS'S D (ASYMMETRIC) = 0.13585 WITH T2GRP3 DEPENDENT. = 0.11140 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.12242
ETA = 0.12451 WITH T2GRP3 DEPENDENT. = 0.18198 WITH SEX DEPENDENT.
PEARSON'S R = 0.12450 SIGNIFICANCE = 0.0896

APPENDIX B (Continued)

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* C R O S S T A B U L A T I O N O F *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=A 3=B 4=O 5=H VALUE.. 2 WHITE-NOT OF HISP OR
* PAGE 1 OF 1

T2GRP3 (SEX: COUNT / ROW PCT / COL PCT / TOT PCT)	MALE 1	FEMALE 2	ROW TOTAL
1 LO 33%TILE GRP-C	1275	1046	2321
	54.9	45.1	22.6
	24.0	21.0	
	12.4	10.2	
2 MID.33%TILE GRP-	2357	2262	4619
	51.0	49.0	44.9
	44.4	45.5	
	22.9	22.0	
3 HI 33%TILE GRP-C	1675	1666	3341
	50.1	49.9	32.5
	31.6	33.5	
	16.3	16.2	
COLUMN TOTAL	5307	4974	10281
	51.6	48.4	100.0

RAW CHI SQUARE = 13.80083 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0010
CRAMER'S V = 0.03664
CONTINGENCY COEFFICIENT = 0.03661
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT. = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00063 WITH T2GRP3 DEPENDENT. = 0.00097 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00077
KENDALL'S TAU B = 0.03104, SIGNIFICANCE = 0.0004
KENDALL'S TAU C = 0.03514, SIGNIFICANCE = 0.0004
CONDITIONAL GAMMA = 0.05402
SOMERS'S D (ASYMMETRIC) = 0.03518 WITH T2GRP3 DEPENDENT. = 0.02739 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.03080
ETA = 0.03353 WITH T2GRP3 DEPENDENT. = 0.03661 WITH SEX DEPENDENT.
PEARSON'S R = 0.03348 SIGNIFICANCE = 0.0003

APPENDIX B (Continued)

* C R O S S T A B U L A T I O N O F *
T2GRP3 IND.STUDENT PST.COMP.SCI.BASED 33% GRPS. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED**M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 3 BLACK-NOT OF HISP OR
* PAGE 1 OF 1

T2GRP3	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
LO 33%TILE GRP-C	1	6174	4660	10834
		57.0	43.0	31.7
		36.1	27.3	
		18.1	13.6	
MID.33%TILE GRP-	2	7802	8490	16292
		47.9	52.1	47.7
		45.6	49.7	
		22.8	24.8	
HI 33%TILE GRP-C	3	3141	3918	7059
		44.5	55.5	20.6
		18.4	23.0	
		9.2	11.5	
	COLUMN TOTAL	17117	17068	34185
		50.1	49.9	100.0

RAW CHI SQUARE = 326.08496 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.09767
CONTINGENCY COEFFICIENT = 0.09720
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT, = 0.08583 WITH SEX DEPENDENT,
LAMBDA (SYMMETRIC) = 0.04190
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00458 WITH T2GRP3 DEPENDENT, = 0.00690 WITH SEX DEPENDENT,
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00551
KENDALL'S TAU B = 0.09001, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.10102, SIGNIFICANCE = 0.0000
CONDITIONAL GAMMA = 0.15967
SOMERS'S D (ASYMMETRIC) = 0.10102 WITH T2GRP3 DEPENDENT. = 0.08020 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.08942
ETA = 0.09353 WITH T2GRP3 DEPENDENT. = 0.09767 WITH SEX DEPENDENT.
PEARSON'S R = 0.09351 SIGNIFICANCE = 0.0000

APPENDIX B (Continued)

CROSSTABULATION OF

T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS, BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F

CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 4 ASIAN OR PAC ISLNDR

T2GRP3	SEX MALE	FEMALE	ROW TOTAL
1 LO 33%TILE GRP-C	31 54.4 19.9 10.6	26 45.6 19.0 8.9	57 19.5
2 MID.33%TILE GRP-	52 48.6 33.3 17.7	55 51.4 40.1 18.8	107 36.5
3 HI 33%TILE GRP-C	73 56.6 46.8 24.9	56 43.4 40.9 19.1	129 44.0
COLUMN TOTAL	156 53.2	137 46.8	293 100.0

RAW CHI SQUARE = 1.53740 WITH 2 DEGREES OF FREEDOM, SIGNIFICANCE = 0.4636
CRAMER'S V = 0.07244
CONTINGENCY COEFFICIENT = 0.07225
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT, = 0.02190 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00997
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00250 WITH T2GRP3 DEPENDENT. = 0.00380 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00302
KENDALL'S TAU B = -0.03779, SIGNIFICANCE = 0.2482
KENDALL'S TAU C = -0.04249, SIGNIFICANCE = 0.2482
CONDITIONAL GAMMA = -0.06697
SOMERS'S D (ASYMMETRIC) = -0.04267 WITH T2GRP3 DEPENDENT, = -0.03346 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.03751
ETA = 0.03309 WITH T2GRP3 DEPENDENT. = 0.07249 WITH SEX DEPENDENT.
PEARSON'S R = -0.03308 SIGNIFICANCE = 0.2864

APPENDIX B (Continued)

BOARD OF EDUCATION-CLEVELAND ... ANALYSIS BY JIM ...
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ... 1983-84 PRE&1984-85 POST CIBS READING ...
FILE PAPSTAPW (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CIBS READING ...

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F

CONTROLLING FOR.. RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 5 HISPANIC PAGE 1 OF 1

T2GRP3	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
LO 33%TILE GRP-C (1)	236	211	447
	52.8	47.2	30.8
	32.7	28.9	
	16.3	14.5	
MID.33%TILE GRP- (2)	297	360	657
	45.2	54.8	45.3
	41.2	49.3	
	20.5	24.8	
HI 33%TILE GRP-C (3)	188	159	347
	54.2	45.8	23.9
	26.1	21.8	
	13.0	11.0	
COLUMN TOTAL	721	730	1451
	49.7	50.3	100.0

RAW CHI SQUARE = 9.80752 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0074
CRAMER'S V = 0.08221
CONTINGENCY COEFFICIENT = 0.08194
LAMBDA (ASYMMETRIC) = 0.0 WITH T2GRP3 DEPENDENT. = 0.07499 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.03564
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00318 WITH T2GRP3 DEPENDENT. = 0.00488 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00385
KENDALL'S TAU B = -0.00052, SIGNIFICANCE = 0.4917
KENDALL'S TAU C = -0.00059, SIGNIFICANCE = 0.4917
CONDITIONAL GAMMA = -0.00091
SOMERS'S D (ASYMMETRIC) = -0.00059 WITH T2GRP3 DEPENDENT. = -0.00046 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.00051
ETA = 0.00339 WITH T2GRP3 DEPENDENT. = 0.08221 WITH SEX DEPENDENT.
PEARSON'S R = -0.00316 SIGNIFICANCE = 0.4522

SUMMARY GAMMAS FOR CROSSTABULATION OF T2GRP3 BY SEX ZERO-ORDER GAMMA = 0.12476
FIRST-ORDER PARTIAL GAMMA = 0.15060

NUMBER OF MISSING OBSERVATIONS = 21075

FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F *
ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
* PAGE 1 OF 1

ADVERSE	SEX: COUNT / ROW PCT / COL PCT / TOT PCT	MALE 1	FEMALE 2	ROW TOTAL
NON-ADV.AFFECTED	0	28538	28334	56872
		50.2	49.8	85.7
		83.8	87.7	
		43.0	42.7	
ADV.AFFECTED GRP	1	5526	3971	9497
		58.2	41.8	14.3
		16.2	12.3	
		8.3	6.0	
COLUMN TOTAL		34064	32305	66369
		51.3	48.7	100.0

CORRECTED CHI SQUARE = 208.54802 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0
RAW CHI SQUARE = 208.86819 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0
PHI = 0.05610
CONTINGENCY COEFFICIENT = 0.05601
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT. = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00385 WITH ADVERSE DEPENDENT. = 0.00228 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00287
KENDALL'S TAU B = -0.05610, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.03927, SIGNIFICANCE = 0.0000
GAMMA = -0.16024
SOMERS'S D (ASYMMETRIC) = -0.03930 WITH ADVERSE DEPENDENT. = -0.08007 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.05273
ETA = 0.05610 WITH ADVERSE DEPENDENT. = 0.05608 WITH SEX DEPENDENT.
PEARSON'S R = -0.05610 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 1034

APPENDIX B (Continued)

* C R O S S T A B U L A T I O N O F *
ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 1 AMER IND OR ESKIMO
* PAGE 1 OF 1

ADVERSE	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
NON-ADV.AFFECTED	0	88	79	167
		52.7	47.3	93.8
		91.7	96.3	
		49.4	44.4	
ADV.AFFECTED GRP	1	8	3	11
		72.7	27.3	6.2
		8.3	3.7	
		4.5	1.7	
COLUMN TOTAL		96	82	178
		53.9	46.1	100.0

CORRECTED CHI SQUARE = 0.95815 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.3277
RAW CHI SQUARE = 1.66695 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.1967
PHI = 0.09677
CONTINGENCY COEFFICIENT = 0.09632
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT. = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02109 WITH ADVERSE DEPENDENT. = 0.00709 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01061
KENDALL'S TAU B = -0.09677. SIGNIFICANCE = 0.0990
KENDALL'S TAU C = -0.04646. SIGNIFICANCE = 0.0990
CONDITIONAL GAMMA = -0.41071
SOMERS'S D (ASYMMETRIC) = -0.04675 WITH ADVERSE DEPENDENT. = -0.20033 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.07581
ETA = 0.09677 WITH ADVERSE DEPENDENT. = 0.09677 WITH SEX DEPENDENT.
PEARSON'S R = -0.09677 SIGNIFICANCE = 0.0999

APPENDIX B (Continued)

FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N O F *
ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 2 WHITE-NOT OF HISP OR
* PAGE 1 OF 1

ADVERSE	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
NON-ADV.AFFECTED	0	7964	7222	15186
		52.4	47.6	91.3
		90.8	91.8	
		47.9	43.4	
ADV.AFFECTED GRP	1	807	644	1451
		55.6	44.4	8.7
		9.2	8.2	
		4.9	3.9	
	COLUMN TOTAL	8771	7866	16637
		52.7	47.3	100.0

CORRECTED CHI SQUARE = 5.22566 WITH 1 DEGREE OF FREEDOM, SIGNIFICANCE = 0.0223
RAW CHI SQUARE = 5.35223 WITH 1 DEGREE OF FREEDOM, SIGNIFICANCE = 0.0207
PHI = 0.01794
CONTINGENCY COEFFICIENT = 0.01793
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT, = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00054 WITH ADVERSE DEPENDENT, = 0.00023 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00033
KENDALL'S TAU B = -0.01794, SIGNIFICANCE = 0.0103
KENDALL'S TAU C = -0.01011, SIGNIFICANCE = 0.0103
CONDITIONAL GAMMA = -0.06383
SOMERS'S D (ASYMMETRIC) = -0.01014 WITH ADVERSE DEPENDENT, = -0.03174 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.01537
ETA = 0.01794 WITH ADVERSE DEPENDENT, = 0.01800 WITH SEX DEPENDENT.
PEARSON'S R = -0.01794 SIGNIFICANCE = 0.0103

APPENDIX B (Continued)

BOARD OF EDUCATION-CLEVELAND [illegible]
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPK (CREATION DATE = 02/10/86) 1983-84 PRE/1984-85 POST CTBS READING WITH 1984-85 APK

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY SEX SEX OF STUDENT--AS CURRENTLY LISTED**N F
CONTROLLING FOR.. RACE RACE OF STUDENT 1=1 2=B 3=H 4=O 5=N VALUE.. 3 BLACK-NOT OF HISP OR PAGE 1 OF 1

	SEX		
COUNT / ROW PCT / COL PCT / TOT PCT	MALE	FEMALE	ROW TOTAL
	1	2	
ADVERSE 0 NON-ADV.AFFECTED	19060	19663	38723
	49.2	50.8	83.0
	80.4	85.7	
	40.9	42.1	
1 ADV.AFFECTED GRP	4658	3272	7930
	58.7	41.3	17.0
	19.6	14.3	
	10.0	7.0	
COLUMN TOTAL	23718	22935	46653
	50.8	49.2	100.0

CORRECTED CHI SQUARE = 238.17859 WITH 1 DEGREE OF FREEDOM, SIGNIFICANCE = 0.0
RAW CHI SQUARE = 238.55981 WITH 1 DEGREE OF FREEDOM, SIGNIFICANCE = 0.0
PHI = 0.07151
CONTINGENCY COEFFICIENT = 0.07133
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT. = 0.02629 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01954
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00564 WITH ADVERSE DEPENDENT. = 0.00271 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00447
KENDALL'S TAU B = -0.07151, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.05371. SIGNIFICANCE = 0.0000
CONDITIONAL GAMMA = -0.18983
SOMERS'S D (ASYMMETRIC) = -0.05373 WITH ADVERSE DEPENDENT. = -0.09518 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.06868
ETA = 0.07151 WITH ADVERSE DEPENDENT. = 0.07154 WITH SEX DEPENDENT.
PEARSON'S R = -0.07151 SIGNIFICANCE = 0.0000

APPENDIX B (Continued)

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BOARD OF EDUCATION-CLEVELAND CITY SCHOOL DISTRICT                    02/10/86        PAGE  155
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZABKAU, PH.D.
FILE   PRPSTAPR (CREATION DATE = 02/10/86)   1983-84 PRE&1984-85 POST CTES READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * * *  C R O S S T A B U L A T I O N  O F  * * * * * * * * * * * * * * * * * * * *
   ADVERSE   ADVERSELY AFFECTED STUDENTS INDICATOR          BY  SEX       SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
   RACE      RACE OF STUDENT  1=I 2=W 3=B 4=O 5=H          VALUE..    4   ASIAN OR PAC ISLNDR
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * PAGE  1 OF  1

                    SEX
          COUNT     |
          ROW PCT   MALE      FEMALE     ROW
          COL PCT   |                    TOTAL
          TOT PCT   |    1    |    2    |
ADVERSE   ----------|---------|---------|
        0           |  275    |  226    |  501
  NON-ADV.AFFECTED  |  54.9   |  45.1   |  98.6
                    |  98.6   |  98.7   |
                    |  54.1   |  44.5   |
                  --|---------|---------|
        1           |    4    |    3    |    7
  ADV.AFFECTED GRP  |  57.1   |  42.9   |  1.4
                    |   1.4   |   1.3   |
                    |   0.8   |   0.6   |
                  --|---------|---------|
          COLUMN        279       229       508
          TOTAL        54.9      45.1     100.0

     2 OUT OF     4 ( 50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY =  3.156
CORRECTED CHI SQUARE =      0.0      WITH 1 DEGREE OF FREEDOM,  SIGNIFICANCE =  1.0000
     RAW CHI SQUARE =      0.01415 WITH 1 DEGREE OF FREEDOM,  SIGNIFICANCE =  0.9053
PHI =     0.00528
CONTINGENCY COEFFICIENT =  0.00528
LAMBDA (ASYMMETRIC) =  0.0      WITH ADVERSE  DEPENDENT,          =  0.0      WITH SEX      DEPENDENT,
LAMBDA (SYMMETRIC) =  0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.00019 WITH ADVERSE  DEPENDENT,          =  0.00002 WITH SEX      DEPENDENT,
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.00004
KENDALL'S TAU B = -0.00528.     SIGNIFICANCE =  0.4527
KENDALL'S TAU C = -0.00122.     SIGNIFICANCE =  0.4527
CONDITIONAL GAMMA = -0.04569
SOMERS'S D (ASYMMETRIC) = -0.00124 WITH ADVERSE  DEPENDENT,          = -0.02253 WITH SEX      DEPENDENT,
SOMERS'S D (SYMMETRIC) = -0.00234
CTA =  0.00529 WITH ADVERSE  DEPENDENT.          =  0.00528 WITH SEX      DEPENDENT.
PEARSON'S R =-0.00528  SIGNIFICANCE =  0.4528
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* * * * * C R O S S T A B U L A T I O N O F * * * * *
ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 5 HISPANIC
* * * * * PAGE 1 OF 1

ADVERSE	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
NON-ADV.AFFECTED	0	1148 50.2 96.1 48.2	1141 49.8 96.0 47.9	2289 96.0
ADV.AFFECTED GRP	1	47 49.5 3.9 2.0	48 50.5 4.0 2.0	95 4.0
	COLUMN TOTAL	1195 50.1	1189 49.9	2384 100.0

CORRECTED CHI SQUARE = 0.00063 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.9800
RAW CHI SQUARE = 0.01683 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.8968
PHI = 0.00266
CONTINGENCY COEFFICIENT = 0.00266
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT. = 0.00084 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00078
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00002 WITH ADVERSE DEPENDENT. = 0.00001 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00001
KENDALL'S TAU B = 0.00266. SIGNIFICANCE = 0.4484
KENDALL'S TAU C = 0.00104. SIGNIFICANCE = 0.4484
CONDITIONAL GAMMA = 0.01358
SOMERS'S D (ASYMMETRIC) = 0.00104 WITH ADVERSE DEPENDENT. = 0.00679 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.00180
ETA = 0.00269 WITH ADVERSE DEPENDENT. = 0.00333 WITH SEX DEPENDENT.
PEARSON'S R = 0.00266 SIGNIFICANCE = 0.4484

SUMMARY GAMMAS FOR CROSSTABULATION OF ADVERSE BY SEX ZERO-ORDER GAMMA = -0.16019
FIRST-ORDER PARTIAL GAMMA = -0.10133

NUMBER OF MISSING OBSERVATIONS = 1043

APPENDIX B (Continued)

CROSSTABULATION OF GAINGRP4 COMP.NCE GAIN GRPS- 1=LL-4 3=GE+4 2=MID. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F

GAINGRP4	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
1 LL -4 NCE GAIN	8578	8598	17176
	49.9	50.1	41.3
	41.6	41.0	
	20.6	20.7	
2 NCE GAIN BETWEEN	3991	4491	8482
	47.1	52.9	20.4
	19.3	21.4	
	9.6	10.8	
3 GE +4 NCE GAIN	8073	7888	15961
	50.6	49.4	38.4
	39.1	37.6	
	19.4	19.0	
COLUMN TOTAL	20642	20977	41619
	49.6	50.4	100.0

RAW CHI SQUARE = 28.94707 WITH 2 DEGREES OF FREEDOM, SIGNIFICANCE = 0.0000
CRAMER'S V = 0.02637
CONTINGENCY COEFFICIENT = 0.02636
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP4 DEPENDENT, = 0.00019 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00010
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00033 WITH GAINGRP4 DEPENDENT, = 0.00059 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00040
KENDALL'S TAU B = -0.00472. SIGNIFICANCE = 0.1550
KENDALL'S TAU C = -0.00534. SIGNIFICANCE = 0.1550
GAMMA = -0.00833
SOMERS'S D (ASYMMETRIC) = -0.00539 WITH GAINGRP4 DEPENDENT, = -0.00417 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.00468
ETA = 0.00533 WITH GAINGRP4 DEPENDENT. = 0.02643 WITH SEX DEPENDENT.
PEARSON'S R = -0.00526 SIGNIFICANCE = 0.1418

NUMBER OF MISSING OBSERVATIONS = 25784

APPENDIX B (Continued)

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *
GAINGRP4 COMP.NCE GAIN GRPS- 1=LE-4 3=GE+4 2=MID. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=E 4=O 5=H VALUE.. 1 AMER IND OR ESKIMO
* PAGE 1 OF 1

GAINGRP4	SEX: COUNT / ROW PCT / COL PCT / TOT PCT	MALE 1	FEMALE 2	ROW TOTAL
1 LE -4 NCE GAIN	COUNT	27	22	49
	ROW PCT	55.1	44.9	49.5
	COL PCT	50.9	47.8	
	TOT PCT	27.3	22.2	
2 NCE GAIN BETWEEN	COUNT	7	11	18
	ROW PCT	38.9	61.1	18.2
	COL PCT	13.2	23.9	
	TOT PCT	7.1	11.1	
3 GE +4 NCE GAIN	COUNT	19	13	32
	ROW PCT	59.4	40.6	32.3
	COL PCT	35.8	28.3	
	TOT PCT	19.2	13.1	
COLUMN TOTAL		53	46	99
		53.5	46.5	100.0

RAW CHI SQUARE = 2.03934 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.3607
CRAMER'S V = 0.14352
CONTINGENCY COEFFICIENT = 0.14207
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP4 DEPENDENT. = 0.08696 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.04167
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01009 WITH GAINGRP4 DEPENDENT. = 0.01495 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01205
KENDALL'S TAU B = -0.01546, SIGNIFICANCE = 0.4361
KENDALL'S TAU C = -0.01714, SIGNIFICANCE = 0.4361
CONDITIONAL GAMMA = -0.02763
SOMERS'S D (ASYMMETRIC) = -0.01723 WITH GAINGRP4 DEPENDENT. = -0.01388 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.01537
ETA = 0.02510 WITH GAINGRP4 DEPENDENT. = 0.14352 WITH SEX DEPENDENT.
PEARSON'S R = -0.02510 SIGNIFICANCE = 0.4026

APPENDIX B (Continued)

BOARD OF EDUCATION-CLEVELAND CITY SCHOOL DISTRICT 02/10/86 PAGE 168
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRESTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * *
GAINGRP4 COMP.NCE GAIN GRPS- 1=LE-4 3=GE+4 2=MID. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 2 WHITE-NOT OF HISP OR
PAGE 1 OF 1

GAINGRP4	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
LE -4 NCE GAIN	1	1903	1852	3755
		50.7	49.3	40.7
		40.4	41.0	
		20.6	20.1	
NCE GAIN BETWEEN	2	899	963	1862
		48.3	51.7	20.2
		19.1	21.3	
		9.7	10.4	
GE +4 NCE GAIN	3	1904	1700	3604
		52.8	47.2	39.1
		40.5	37.7	
		20.6	18.4	
	COLUMN TOTAL	4706	4515	9221
		51.0	49.0	100.0

RAW CHI SQUARE = 10.48788 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0053
CRAMER'S V = 0.03373
CONTINGENCY COEFFICIENT = 0.03371
LAMBDA (ASYMMETRIC) = 0.00018 WITH GAINGRP4 DEPENDENT, = 0.01417 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00651
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00054 WITH GAINGRP4 DEPENDENT, = 0.00082 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00065
KENDALL'S TAU B = -0.01782, SIGNIFICANCE = 0.0356
KENDALL'S TAU C = -0.02017, SIGNIFICANCE = 0.0356
CONDITIONAL GAMMA = -0.03148
SOMERS'S D (ASYMMETRIC) = -0.02018 WITH GAINGRP4 DEPENDENT. = -0.01574 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.01769
ETA = 0.01900 WITH GAINGRP4 DEPENDENT. = 0.03370 WITH SEX DEPENDENT.
PEARSON'S R = -0.01898 SIGNIFICANCE = 0.0343

APPENDIX B (Continued)

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FLAIR UI EDUCATION-ELL ...
84-85 DISCREPANT READING STUDY--ANALYSIS BY ... 1983-84 PRE&1984-85 POST ...
FILE  PRFSTAPR (CREATION DATE = 02/10/86)

* * * * * * * * * * * * * * * * * *  C R O S S T A B U L A T I O N  O F  * * * * * * * * * * * * * * * * * *
   GAINGRP4  COMP.NCE GAIN GRPS- 1=LL-4 3=GE+4 2=MID.     BY  SEX      SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
   RACE      RACE OF STUDENT  1=I 2=W 3=B 4=O 5=H          VALUE..    3   BLACK-NOT OF HISP OR                PAGE  1 OF  1
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COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE (1)	SEX: FEMALE (2)	ROW TOTAL
GAINGRP4 1 LL -4 NCE GAIN	6344	6396	12740
	49.8	50.2	41.4
	41.9	40.9	
	20.6	20.8	
2 NCE GAIN BETWEEN	2943	3343	6286
	46.8	53.2	20.4
	19.5	21.4	
	9.6	10.9	
3 GE +4 NCE GAIN	5837	5900	11737
	49.7	50.3	38.2
	38.6	37.7	
	19.0	19.2	
COLUMN TOTAL	15124	15639	30763
	49.2	50.8	100.0

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RAW CHI SQUARE =    17.38705 WITH     2 DEGREES OF FREEDOM.  SIGNIFICANCE =  0.0002
CRAMER'S V =  0.02377
CONTINGENCY COEFFICIENT =  0.02377
LAMBDA (ASYMMETRIC) =  0.0     WITH GAINGRP4 DEPENDENT.          =  0.0     WITH SEX     DEPENDENT.
LAMBDA (SYMMETRIC) =  0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.00027 WITH GAINGRP4 DEPENDENT.      =  0.00041 WITH SEX      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.00032
KENDALL'S TAU B =  0.00124,    SIGNIFICANCE =  0.4095
KENDALL'S TAU C =  0.00140,    SIGNIFICANCE =  0.4095
CONDITIONAL GAMMA =  0.00218
SOMERS'S D (ASYMMETRIC) =  0.00140 WITH GAINGRP4 DEPENDENT.       =  0.00109 WITH SEX      DEPENDENT.
SOMERS'S D (SYMMETRIC) =  0.00123
ETA =  0.00134 WITH GAINGRP4 DEPENDENT.           =  0.02378 WITH SEX      DEPENDENT.
PEARSON'S R =  0.00102  SIGNIFICANCE =  0.4292
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* C R O S S T A B U L A T I O N O F *
GAINGRP4 COMP.NCE GAIN GRPS- 1=LE-4 3=GE+4 2=MID. BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 4 ASIAN OR PAC ISLNDR
* PAGE 1 OF 1

GAINGRP4	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
LE -4 NCE GAIN	1	53	44	97
		54.6	45.4	37.0
		37.9	36.1	
		20.2	16.8	
NCE GAIN BETWEEN	2	15	30	45
		33.3	66.7	17.2
		10.7	24.6	
		5.7	11.5	
GE +4 NCE GAIN	3	72	48	120
		60.0	40.0	45.8
		51.4	39.3	
		27.5	18.3	
COLUMN TOTAL		140	122	262
		53.4	46.6	100.0

RAW CHI SQUARE = 9.44298 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0089
CRAMER'S V = 0.18985
CONTINGENCY COEFFICIENT = 0.18652
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP4 DEPENDENT. = 0.12295 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05682
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01769 WITH GAINGRP4 DEPENDENT. = 0.02632 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.02116
KENDALL'S TAU B = -0.05931, SIGNIFICANCE = 0.1571
KENDALL'S TAU C = -0.06608, SIGNIFICANCE = 0.1571
CONDITIONAL GAMMA = -0.10459
SOMERS'S D (ASYMMETRIC) = -0.06639 WITH GAINGRP4 DEPENDENT. = -0.05298 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.05893
ETA = 0.05667 WITH GAINGRP4 DEPENDENT. = 0.18986 WITH SEX DEPENDENT.
PEARSON'S R = -0.05668 SIGNIFICANCE = 0.1804

APPENDIX B (Continued) 99

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BOARD OF EDUCATION-SECONDARY ...
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZARINAU, PH.D.
FILE  PAPSTAPR (CREATION DATE = 02/10/86)   1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * * *  C R O S S T A B U L A T I O N   O F  * * * * * * * * * * * * * * * * * * * *
   GAINGRP4  COMP.NCE GAIN GRPS- 1-LE-4 3=GE+4 2=MID.     BY  SEX      SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
   RACE      RACE OF STUDENT  1=I 2=H 3=B 4=U 5=H          VALUE..    5   HISPANIC                    PAGE  1 OF  1
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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	SEX		
COUNT / ROW PCT / COL PCT / TOT PCT	MALE 1	FEMALE 2	ROW TOTAL
GAINGRP4 1 LE -4 NCE GAIN	251 / 47.0 / 40.6 / 19.8	283 / 53.0 / 43.4 / 22.3	534 / 42.0
2 NCE GAIN BETWEEN	126 / 46.7 / 20.4 / 9.9	144 / 53.3 / 22.1 / 11.3	270 / 21.3
3 GE +4 NCE GAIN	241 / 51.7 / 39.0 / 19.0	225 / 48.3 / 34.5 / 17.7	466 / 36.7
COLUMN TOTAL	618 / 48.7	652 / 51.3	1270 / 100.0

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RAW CHI SQUARE =     2.75869 WITH      2 DEGREES OF FREEDOM.  SIGNIFICANCE =  0.2517
CRAMER'S V =  0.04661
CONTINGENCY COEFFICIENT =  0.04656
LAMBDA (ASYMMETRIC) =  0.0     WITH GAINGRP4 DEPENDENT.          =  0.02989 WITH SEX       DEPENDENT.
LAMBDA (SYMMETRIC) =  0.01182
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.00102 WITH GAINGRP4 DEPENDENT.          =  0.00157 WITH SEX       DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.00124
KENDALL'S TAU B =  -0.03868.    SIGNIFICANCE =  0.0760
KENDALL'S TAU C =  -0.04364.    SIGNIFICANCE =  0.0760
CONDITIONAL GAMMA =  -0.06780
SOMERS'S D (ASYMMETRIC) =  -0.04367 WITH GAINGRP4 DEPENDENT.          =  -0.03391 WITH SEX       DEPENDENT.
SOMERS'S D (SYMMETRIC) =  -0.03818
LTA =  0.04107 WITH GAINGRP4 DEPENDENT.          =  0.04659 WITH SEX       DEPENDENT.
PEARSON'S R =  -0.04107  SIGNIFICANCE =  0.0718

SUMMARY GAMMAS FOR CROSSTABULATION OF  GAINGRP4 BY SEX          ZERO-ORDER GAMMA =  -0.00838
                                                                FIRST-ORDER PARTIAL GAMMA =  -0.00070

NUMBER OF MISSING OBSERVATIONS =  25788
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BOARD OF EDUCATION--[illegible]
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZALIKAU, PH.D.
FILE PAPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

CROSSTABULATION OF GAINGRP BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F PAGE 1 OF 1

GAINGRP	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
1 DANCE LE -7	6823	6579	13402
	ROW PCT 50.9	49.1	32.2
	COL PCT 33.1	31.4	
	TOT PCT 16.4	15.8	
2 DANCE -7 TO +7	7501	8493	15994
	ROW PCT 46.9	53.1	38.4
	COL PCT 36.3	40.5	
	TOT PCT 18.0	20.4	
3 DANCE GE 7	6318	5905	12223
	ROW PCT 51.7	48.3	29.4
	COL PCT 30.6	28.1	
	TOT PCT 15.2	14.2	
COLUMN TOTAL	20642	20977	41619
	49.6	50.4	100.0

RAW CHI SQUARE = 77.23325 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.04308
CONTINGENCY COEFFICIENT = 0.04304
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP DEPENDENT, = 0.0103183 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01420
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00088 WITH GAINGRP DEPENDENT, = 0.00130 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00104
KENDALL'S TAU B = -0.00410. SIGNIFICANCE = 0.1877
KENDALL'S TAU C = -0.00472. SIGNIFICANCE = 0.1877
GAMMA = -0.00712
SOMERS'S D (ASYMMETRIC) = -0.00472 WITH GAINGRP DEPENDENT, = -0.00356 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.00406
ETA = 0.00494 WITH GAINGRP DEPENDENT. = 0.04310 WITH SEX DEPENDENT.
PEARSON'S R = -0.00468 SIGNIFICANCE = 0.1596

NUMBER OF MISSING OBSERVATIONS = 25784

BOARD OF EDUCATION ...
84-85 DISCREPANT READING STUDY--ANALYSIS OF ... 1983-84 PRE:1984-85 POST ...
FILE PRPSTAPR (CREATION DATE = 02/10/86)

* C R O S S T A B U L A T I O N O F *
BY SEX SEX OF STUDENT--AS CURRENTLY LISTED**M F

GAINGRP
CONTROLLING FOR.. RACI RACE OF STUDENT 1=I 2=H 3=B 4=O 5=H VALUE.. 1 AMER IND OR ESKIMO * * * * * * * * * * PAGE 1 OF 1

COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
GAINGRP 1 (DANCE LE -7)	24	19	43
	55.8	44.2	43.4
	45.3	41.3	
	24.2	19.2	
2 (DANCE -7 TO +7)	14	18	32
	43.8	56.3	32.3
	26.4	39.1	
	14.1	18.2	
3 (DANCE GE 7)	15	9	24
	62.5	37.5	24.2
	28.3	19.6	
	15.2	9.1	
COLUMN TOTAL	53	46	99
	53.5	46.5	100.0

RAW CHI SQUARE = 2.09692 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.3505
CRAMER'S V = 0.14554
CONTINGENCY COEFFICIENT = 0.14402
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP DEPENDENT. = 0.08696 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.03922
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00993 WITH GAINGRP DEPENDENT. = 0.01539 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01207
KENDALL'S TAU B = -0.01689, SIGNIFICANCE = 0.4299
KENDALL'S TAU C = -0.01918, SIGNIFICANCE = 0.4299
CONDITIONAL GAMMA = -0.02947
SOMERS'S D (ASYMMETRIC) = -0.01928 WITH GAINGRP DEPENDENT. = -0.01480 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.01674
ETA = 0.02972 WITH GAINGRP DEPENDENT. = 0.14554 WITH SEX DEPENDENT.
PEARSON'S R = -0.02966 SIGNIFICANCE = 0.3854

APPENDIX B (Continued)

* * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * *

GAINGRP BY SEX SEX OF STUDENT--AS CURRENTLY LISTED-M F

CONTROLLING FOR..

RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 2 WHITE-NOT OF HISP OR

PAGE 1 OF 1

GAINGRP	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
D2NCE LE -7	1	1492	1413	2905
		51.4	48.6	31.5
		31.7	31.3	
		16.2	15.3	
D2NCE -7 TO +7	2	1716	1804	3520
		48.8	51.3	38.2
		36.5	40.0	
		18.6	19.6	
D2NCE GE 7	3	1498	1298	2796
		53.6	46.4	30.3
		31.8	28.7	
		16.2	14.1	
	COLUMN TOTAL	4706	4515	9221
		51.0	49.0	100.0

RAW CHI SQUARE = 14.70452 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0006
CRAMER'S V = 0.03993
CONTINGENCY COEFFICIENT = 0.03990
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP DEPENDENT. = 0.01949 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00861
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00073 WITH GAINGRP DEPENDENT. = 0.00115 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00089
KENDALL'S TAU B = -0.01586, SIGNIFICANCE = 0.0532
KENDALL'S TAU C = -0.01826, SIGNIFICANCE = 0.0532
CONDITIONAL GAMMA = -0.02753
SOMERS'S D (ASYMMETRIC) = -0.01827 WITH GAINGRP DEPENDENT. = -0.01377 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.01571
ETA = 0.01703 WITH GAINGRP DEPENDENT. = 0.03990 WITH SEX DEPENDENT.
PEARSON'S R = -0.01700 SIGNIFICANCE = 0.0513

BOARD OF EDUCATION-CLEVELAND ....
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE1984-85 POST CTBS READING WITH 1984-85 AFR

* C R O S S T A B U L A T I O N O F *
GAINGRP BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
CONTROLLING FOR..
RACE RACE OF STUDENT 1=I 2=A 3=B 4=O 5=H VALUE.. 3 BLACK-NOT OF HISP OR
* PAGE 1 OF 1

GAINGRP	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
D2NCE LE -7	1	5064	4899	9963
		50.8	49.2	32.4
		33.5	31.3	
		16.5	15.9	
D2NCE -7 TO +7	2	5500	6352	11852
		46.4	53.6	38.5
		36.4	40.6	
		17.9	20.6	
D2NCE GE 7	3	4560	4388	8948
		51.0	49.0	29.1
		30.2	28.1	
		14.8	14.3	
	COLUMN TOTAL	15124	15639	30763
		49.2	50.8	100.0

RAW CHI SQUARE = 58.68134 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.04368
CONTINGENCY COEFFICIENT = 0.04363
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP DEPENDENT, = 0.02220 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00990
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00087 WITH GAINGRP DEPENDENT. = 0.00138 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00107
KENDALL'S TAU B = 0.00100, SIGNIFICANCE = 0.4262
KENDALL'S TAU C = 0.00115, SIGNIFICANCE = 0.4262
CONDITIONAL GAMMA = 0.00174
SOMERS'S D (ASYMMETRIC) = 0.00115 WITH GAINGRP DEPENDENT. = 0.00087 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.00099
ETA = 0.00178 WITH GAINGRP DEPENDENT. = 0.04371 WITH SEX DEPENDENT.
PEARSON'S R = 0.00042 SIGNIFICANCE = 0.4706

APPENDIX B (Continued)

APPENDIX B (Continued)

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

GAINGRP BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F

CONTROLLING FOR..

RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H VALUE.. 4 ASIAN OR PAC ISLNDR

PAGE 1 OF 1

GAINGRP	COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE 1	FEMALE 2	ROW TOTAL
DSNCE LE -7	1	39	34	73
		53.4	46.6	27.9
		27.9	27.9	
		14.9	13.0	
DSNCE -7 TO +7	2	49	53	102
		48.0	52.0	38.9
		35.0	43.4	
		18.7	20.2	
DSNCE GE 7	3	52	35	87
		59.8	40.2	33.2
		37.1	28.7	
		19.8	13.4	
	COLUMN TOTAL	140	122	262
		53.4	46.6	100.0

RAW CHI SQUARE = 2.59678 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.2730
CRAMER'S V = 0.09956
CONTINGENCY COEFFICIENT = 0.09907
LAMBDA (ASYMMETRIC) = 0.01875 WITH GAINGRP DEPENDENT. = 0.03279 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02482
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00456 WITH GAINGRP DEPENDENT. = 0.00720 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00559
KENDALL'S TAU B = -0.05300, SIGNIFICANCE = 0.1822
KENDALL'S TAU C = -0.06078, SIGNIFICANCE = 0.1822
CONDITIONAL GAMMA = -0.09200
SOMERS'S D (ASYMMETRIC) = -0.06107 WITH GAINGRP DEPENDENT. = -0.04601 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.05248
ETA = 0.05415 WITH GAINGRP DEPENDENT. = 0.09957 WITH SEX DEPENDENT.
PEARSON'S R = -0.05417 SIGNIFICANCE = 0.1913

105

BOARD OF EDUCATION-CLEVELAND CITY SCHOOL DISTRICT
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE DRPSTAPK (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APK

CROSSTABULATION OF GAINGRP BY SEX SEX OF STUDENT--AS CURRENTLY LISTED**M F
CONTROLLING FOR.. RACE RACE OF STUDENT 1=I 2=H 3=B 4=O 5=H VALUE.. 5 HISPANIC
PAGE 1 OF 1

GAINGRP	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
1 DZNCE LE -7	204	213	417
	48.9	51.1	32.8
	33.0	32.7	
	16.1	16.8	
2 DZNCE -7 TO +7	221	266	487
	45.4	54.6	38.3
	35.8	40.8	
	17.4	20.9	
3 DZNCE GE 7	193	173	366
	52.7	47.3	28.8
	31.2	26.5	
	15.2	13.6	
COLUMN TOTAL	618	652	1270
	48.7	51.3	100.0

RAW CHI SQUARE = 4.53826 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1034
CRAMER'S V = 0.05978
CONTINGENCY COEFFICIENT = 0.05967
LAMBDA (ASYMMETRIC) = 0.0 WITH GAINGRP DEPENDENT. = 0.03236 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01428
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00164 WITH GAINGRP DEPENDENT. = 0.00258 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00200
KENDALL'S TAU B = -0.02529, SIGNIFICANCE = 0.1698
KENDALL'S TAU C = -0.02909, SIGNIFICANCE = 0.1698
CONDITIONAL GAMMA = -0.04389
SOMERS'S D (ASYMMETRIC) = -0.02911 WITH GAINGRP DEPENDENT. = -0.02197 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.02504
ETA = 0.02778 WITH GAINGRP DEPENDENT. = 0.05977 WITH SEX DEPENDENT.
PEARSON'S R = -0.02776 SIGNIFICANCE = 0.1615

SUMMARY GAMMAS FOR CROSSTABULATION OF GAINGRP BY SEX
ZERO-ORDER GAMMA = -0.00717
FIRST-ORDER PARTIAL GAMMA = -0.00075

NUMBER OF MISSING OBSERVATIONS = 25788

APPENDIX C

CROSSTABULATION OF ADVERSE ADVERSELY AFFECTED STUDENTS INDICATOR BY T2GRP3 IND,STUDENT PST.COMP,SCR,BASED 33% GRPS.
PAGE 1 OF 1

ADVERSE	T2GRP3 1 LO 33%TILE GRP-C	2 MID.33%TILE GRP-	3 HI 33%TILE GRP-C	ROW TOTAL
0 NON-ADV.AFFECTED	10292	19960	10688	40940
	25.1	48.8	26.1	88.4
	75.2	91.8	98.0	
	22.2	43.1	23.1	
1 ADV.AFFECTED GRP	3392	1780	222	5394
	62.9	33.0	4.1	11.6
	24.8	8.2	2.0	
	7.3	3.8	0.5	
COLUMN TOTAL	13684	21740	10910	46334
	29.5	46.9	23.5	100.0

RAW CHI SQUARE = 3530.16650 WITH 2 DEGREES OF FREEDOM, SIGNIFICANCE = 0.0
CRAMER'S V = 0.27602
CONTINGENCY COEFFICIENT = 0.26607
LAMBDA (ASYMMETRIC) = 0.0 WITH ADVERSE DEPENDENT, = 0.06581 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05375
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.10562 WITH ADVERSE DEPENDENT, = 0.03599 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.05368
KENDALL'S TAU B = -0.25203. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.18250. SIGNIFICANCE = 0.0000
GAMMA = -0.66172
SOMERS'S D (ASYMMETRIC) = -0.16320 WITH ADVERSE DEPENDENT, = -0.44359 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.21651
ETA = 0.27603 WITH ADVERSE DEPENDENT, = 0.26385 WITH T2GRP3 DEPENDENT.
PEARSON'S R = -0.26366 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21069

BOARD OF EDUCATION-CLEVELAND CITY SCHOOL DISTRICT) 02/10/86 PAGE 174
84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIKAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* CROSSTABULATION OF *
BIRACE BLACK=5 WHITE=6 MISSING DATA=-999 BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.
* PAGE 1 OF 1

	T2GRP3			
	COUNT			
	ROW PCT	LO 33%TI	MID.33%I	HI 33%TI	ROW
	COL PCT	LE GRP-C	LE GRP-	LE GRP-C	TOTAL
	TOT PCT	1	2	3	
BIRACE					
5		10834	16292	7059	34185
BLACK--NONHISPAN		31.7	47.7	20.6	76.9
		82.4	77.9	67.9	
		24.4	36.6	15.9	
6		2321	4619	3341	10281
WHITE--NONHISPAN		22.6	44.9	32.5	23.1
		17.6	22.1	32.1	
		5.2	10.4	7.5	
COLUMN TOTAL		13155	20911	10400	44466
		29.6	47.0	23.4	100.0

RAW CHI SQUARE = 708.91772 WITH 2 DEGREES OF FREEDOM, SIGNIFICANCE = 0.0
CRAMER'S V = 0.12627
CONTINGENCY COEFFICIENT = 0.12527
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT, = 0.0 WITH T2GRP3 DEPENDENT,
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01431 WITH BIRACE DEPENDENT, = 0.00733 WITH T2GRP3 DEPENDENT,
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00970
KENDALL'S TAU B = 0.11453, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.10897, SIGNIFICANCE = 0.0000
GAMMA = 0.23681
SOMERS'S D (ASYMMETRIC) = 0.08559 WITH BIRACE DEPENDENT, = 0.15327 WITH T2GRP3 DEPENDENT,
SOMERS'S D (SYMMETRIC) = 0.10984
ETA = 0.12666 WITH BIRACE DEPENDENT, = 0.12188 WITH T2GRP3 DEPENDENT,
PEARSON'S R = 0.12187 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 22937

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAIKAU, Ph.D.
FILE PRFSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* CROSSTABULATION OF * * * * * * * * * * * * * * * * * * *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H
* PAGE 1 OF 1

T2GRP3	RACE COUNT | ROW PCT | AMER IND COL PCT | OR ESKI TOT PCT | 1	WHITE-NO T OF HIS 2	BLACK-NO T OF HIS 3	ASIAN OR PAC ISL 4	HISPANIC 5	ROW TOTAL
1	23	2321	10834	57	447	13682
LO 33%TILE GRP-C	0.2	17.0	79.2	0.4	3.3	29.5
	19.5	22.6	31.7	19.5	30.8	
	0.0	5.0	23.4	0.1	1.0	
2	63	4619	16292	107	657	21738
MID.33%TILE GRP-	0.3	21.2	74.9	0.5	3.0	46.9
	53.4	44.9	47.7	36.5	45.3	
	0.1	10.0	35.2	0.2	1.4	
3	32	3341	7059	129	347	10908
HI 33%TILE GRP-C	0.3	30.6	64.7	1.2	3.2	23.5
	27.1	32.5	20.6	44.0	23.9	
	0.1	7.2	15.2	0.3	0.7	
COLUMN TOTAL	118	10281	34185	293	1451	46328
	0.3	22.2	73.8	0.6	3.1	100.0

RAW CHI SQUARE = 783.26440 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.09194
CONTINGENCY COEFFICIENT = 0.12894
LAMBDA (ASYMMETRIC) = 0.00089 WITH T2GRP3 DEPENDENT, = 0.00 WITH RACE DEPENDENT,
LAMBDA (SYMMETRIC) = 0.00060
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00774 WITH T2GRP3 DEPENDENT, = 0.01144 WITH RACE DEPENDENT,
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00923
KENDALL'S TAU B = -0.09532. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.07266. SIGNIFICANCE = 0.0000
GAMMA = -0.18487
SOMERS'S D (ASYMMETRIC) = -0.11953 WITH T2GRP3 DEPENDENT, = -0.07602 WITH RACE DEPENDENT,
SOMERS'S D (SYMMETRIC) = -0.09293
ETA = 0.12429 WITH T2GRP3 DEPENDENT, = 0.08325 WITH RACE DEPENDENT,
PEARSON'S R =-0.08195 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21075

CROSSTABULATION OF RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H BY T2GRP3 IND.STUDENT PST,COMP.SCR,BASED 33% GRPS.
PAGE 1 OF 1

RACE	COUNT / ROW PCT / COL PCT / TOT PCT	T2GRP3 LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
1		23	63	32	118
AMER IND OR ESKI		19.5	53.4	27.1	0.3
		0.2	0.3	0.3	
		0.0	0.1	0.1	
2		2321	4619	3341	10281
WHITE-NOT OF HIS		22.6	44.9	32.5	22.2
		17.0	21.2	30.6	
		5.0	10.0	7.2	
3		10834	16292	7059	34185
BLACK-NOT OF HIS		31.7	47.7	20.6	73.8
		79.2	74.9	64.7	
		23.4	35.2	15.2	
4		57	107	129	293
ASIAN OR PAC ISL		19.5	36.5	44.0	0.6
		0.4	0.5	1.2	
		0.1	0.2	0.3	
5		447	657	347	1451
HISPANIC		30.8	45.3	23.9	3.1
		3.3	3.0	3.2	
		1.0	1.4	0.7	
COLUMN TOTAL		13682 29.5	21738 46.9	10908 23.5	46328 100.0

RAW CHI SQUARE = 783.26416 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.09196
CONTINGENCY COEFFICIENT = 0.12894
LAMBDA (ASYMMETRIC) = 0.0 WITH RACE DEPENDENT. = 0.00089 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00060
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01166 WITH RACE DEPENDENT. = 0.00779 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00923
KENDALL'S TAU B = -0.09532. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.07266. SIGNIFICANCE = 0.0000
GAMMA = -0.18487
SOMERS'S D (ASYMMETRIC) = -0.07602 WITH RACE DEPENDENT. = -0.11953 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.09293
ETA = 0.08325 WITH RACE DEPENDENT. = 0.12429 WITH T2GRP3 DEPENDENT.
PEARSON'S R = -0.08195 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21079

84-85 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAFIRAU, PH.D.
FILE PRPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* C R O S S T A B U L A T I O N   O F *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H
CONTROLLING FOR..
SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F VALUE.. 1 MALE
* PAGE 1 OF 1

T2GRP3	COUNT / ROW PCT / COL PCT / TOT PCT	AMER IND OR ESKI 1	WHITE-NO T OF HIS 2	BLACK-NO T OF HIS 3	ASIAN OR PAC ISL 4	HISPANIC 5	ROW TOTAL
1 LO 33%TILE GRP-C	COUNT	13	1275	6174	31	236	7729
	ROW PCT	0.2	16.5	79.9	0.4	3.1	33.1
	COL PCT	20.0	24.0	36.1	19.9	32.7	
	TOT PCT	0.1	5.5	26.4	0.1	1.0	
2 MID.33%TILE GRP-	COUNT	39	2357	7802	52	297	10547
	ROW PCT	0.4	22.3	74.0	0.5	2.8	45.1
	COL PCT	60.0	44.4	45.6	33.3	41.2	
	TOT PCT	0.2	10.1	33.4	0.2	1.3	
3 HI 33%TILE GRP-C	COUNT	13	1675	3141	73	188	5090
	ROW PCT	0.3	32.9	61.7	1.4	3.7	21.8
	COL PCT	20.0	31.6	18.4	46.8	26.1	
	TOT PCT	0.1	7.2	13.4	0.3	0.8	
COLUMN TOTAL		65	5307	17117	156	721	23366
		0.3	22.7	73.3	0.7	3.1	100.0

RAW CHI SQUARE = 577.82178 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.11120
CONTINGENCY COEFFICIENT = 0.15535
LAMBDA (ASYMMETRIC) = 0.00164 WITH T2GRP3 DEPENDENT. = 0.0 WITH RACE DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00110
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01129 WITH T2GRP3 DEPENDENT. = 0.01654 WITH RACE DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01342
KENDALL'S TAU B = -0.10903, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.08382, SIGNIFICANCE = 0.0000
CONDITIONAL GAMMA = -0.20836
SOMERS'S D (ASYMMETRIC) = -0.13603 WITH T2GRP3 DEPENDENT. = -0.08739 WITH RACE DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.10642
ETA = 0.15063 WITH T2GRP3 DEPENDENT. = 0.08897 WITH RACE DEPENDENT.
PEARSON'S R = -0.08881 SIGNIFICANCE = 0.0000

APPENDIX C (Continued)

* C R O S S T A B U L A T I O N O F *
T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS. BY RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H
CONTROLLING FOR..
SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F VALUE.. 2 FEMALE
* PAGE 1 OF 1

T2GRP3 (RACE →) COUNT / ROW PCT / COL PCT / TOT PCT	AMER IND OR ESKI 1	WHITE-NO T OF HIS 2	BLACK-NO T OF HIS 3	ASIAN OR PAC ISL 4	HISPANIC 5	ROW TOTAL
1 LO 33%TILE GRP-C	10	1046	4660	26	211	5953
	0.2	17.6	78.3	0.4	3.5	25.9
	18.9	21.0	27.3	19.0	28.9	
	0.0	4.6	20.3	0.1	0.9	
2 MID.33%TILE GRP-	24	2262	8490	55	360	11191
	0.2	20.2	75.9	0.5	3.2	48.7
	45.3	45.5	49.7	40.1	49.3	
	0.1	9.9	37.0	0.2	1.6	
3 HI 33%TILE GRP-C	19	1666	3918	56	159	5818
	0.3	28.6	67.3	1.0	2.7	25.3
	35.8	33.5	23.0	40.9	21.8	
	0.1	7.3	17.1	0.2	0.7	
COLUMN TOTAL	53	4974	17068	137	730	22962
	0.2	21.7	74.3	0.6	3.2	100.0

RAW CHI SQUARE = 269.03394 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.07654
CONTINGENCY COEFFICIENT = 0.10761
LAMBDA (ASYMMETRIC) = 0.00008 WITH T2GRP3 DEPENDENT. = 0.0 WITH RACE DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00006
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00540 WITH T2GRP3 DEPENDENT. = 0.00801 WITH RACE DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00645
KENDALL'S TAU B = -0.08363, SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.06299, SIGNIFICANCE = 0.0000
CONDITIONAL GAMMA = -0.16467
SOMERS'S D (ASYMMETRIC) = -0.10511 WITH T2GRP3 DEPENDENT. = -0.06654 WITH RACE DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.08149
ETA = 0.10122 WITH T2GRP3 DEPENDENT. = 0.08079 WITH RACE DEPENDENT.
PEARSON'S R = -0.07686 SIGNIFICANCE = 0.0000

SUMMARY GAMMAS FOR CROSSTABULATION OF T2GRP3 BY RACE
ZERO-ORDER GAMMA = -0.18487
FIRST-ORDER PARTIAL GAMMA = -0.18745

NUMBER OF MISSING OBSERVATIONS = 21075

APPENDIX C (Continued)

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F *
GAINGRP4 COMP.NCE GAIN GRPS- 1=LE-4 3=GE+4 2=MID. BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.
* PAGE 1 OF 1

GAINGRP4	T2GRP3 COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
LE -4 NCE GAIN	1	7486	7331	2359	17176
		43.6	42.7	13.7	41.3
		64.1	37.1	23.2	
		18.0	17.6	5.7	
NCE GAIN BETWEEN	2	1858	5031	1593	8482
		21.9	59.3	18.8	20.4
		15.9	25.5	15.6	
		4.5	12.1	3.8	
GE +4 NCE GAIN	3	2343	7387	6231	15961
		14.7	46.3	39.0	38.4
		20.0	37.4	61.2	
		5.6	17.7	15.0	
	COLUMN TOTAL	11687	19749	10183	41619
		28.1	47.5	24.5	100.0

RAW CHI SQUARE = 5250.53125 WITH 4 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.25115
CONTINGENCY COEFFICIENT = 0.33470
LAMBDA (ASYMMETRIC) = 0.16070 WITH GAINGRP4 DEPENDENT. = 0.00709 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.08816
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.05908 WITH GAINGRP4 DEPENDENT. = 0.05920 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.05914
KENDALL'S TAU B = 0.30422. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.29140. SIGNIFICANCE = 0.0000
GAMMA = 0.46372
SOMERS'S D (ASYMMETRIC) = 0.30540 WITH GAINGRP4 DEPENDENT. = 0.30304 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.30421
ETA = 0.33434 WITH GAINGRP4 DEPENDENT. = 0.33385 WITH T2GRP3 DEPENDENT.
PEARSON'S R = 0.33384 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 25784

APPENDIX C (Continued)

FILE PEPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *
GAINGRP
BY T2GRP3 IND.STUDENT PST.COMP.SCR,BASED 33% GRPS.
* PAGE 1 OF 1

GAINGRP	T2GRP3 COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
D.NCE LE -7	1	6360	5430	1612	13402
		47.5	40.5	12.0	32.2
		54.4	27.5	15.8	
		15.3	13.0	3.9	
D.NCE -7 TO +7	2	3648	8819	3527	15994
		22.8	55.1	22.1	38.4
		31.2	44.7	34.6	
		8.8	21.2	8.5	
D.NCE GE 7	3	1679	5500	5044	12223
		13.7	45.0	41.3	29.4
		14.4	27.8	49.5	
		4.0	13.2	12.1	
	COLUMN TOTAL	11687	19749	10183	41619
		28.1	47.5	24.5	100.0

RAW CHI SQUARE = 5491.62891 WITH 4 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.25686
CONTINGENCY COEFFICIENT = 0.34142
LAMBDA (ASYMMETRIC) = 0.16503 WITH GAINGRP DEPENDENT, = 0.04252 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.10862
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.05890 WITH GAINGRP DEPENDENT. = 0.06099 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.05992
KENDALL'S TAU B = 0.31013. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.30196. SIGNIFICANCE = 0.0000
GAMMA = 0.46394
SOMERS'S D (ASYMMETRIC) = 0.31646 WITH GAINGRP DEPENDENT. = 0.30392 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.31006
ETA = 0.34230 WITH GAINGRP DEPENDENT. = 0.34224 WITH T2GRP3 DEPENDENT.
PEARSON'S R = 0.34156 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 25784

APPENDIX C (Continued)

APPENDIX C (Continued)

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *
CSCHLEV
BY T2GRP3 IND,STUDENT PST.COMP.SCR.BASED 33% GRPS.
* PAGE 1 OF 1

CSCHLEV	T2GRP3: COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
PUBLIC ELEMENTAR	3	6053	11539	6746	24338
		24.9	47.4	27.7	52.5
		44.2	53.1	61.8	
		13.1	24.9	14.6	
PUBLIC JUNIOR HS	4	3966	5596	2189	11751
		33.8	47.6	18.6	25.4
		29.0	25.7	20.1	
		8.6	12.1	4.7	
PUBLIC SENIOR HS	5	2914	3337	1378	7629
		38.2	43.7	18.1	16.5
		21.3	15.3	12.6	
		6.3	7.2	3.0	
SPECIAL SCHSCINS	6	751	1268	597	2616
		28.7	48.5	22.8	5.6
		5.5	5.8	5.5	
		1.6	2.7	1.3	
COLUMN TOTAL		13684	21740	10910	46334
		29.5	46.9	23.5	100.0

RAW CHI SQUARE = 863.24731 WITH 6 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.09652
CONTINGENCY COEFFICIENT = 0.13524
LAMBDA (ASYMMETRIC) = 0.0 WITH CSCHLEV DEPENDENT. = 0.0 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00813 WITH CSCHLEV DEPENDENT. = 0.00882 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00846
KENDALL'S TAU B = -0.10690. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.10156. SIGNIFICANCE = 0.0000
GAMMA = -0.16830
SOMERS'S D (ASYMMETRIC) = -0.10625 WITH CSCHLEV DEPENDENT. = -0.10756 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.10690
ETA = 0.10380 WITH CSCHLEV DEPENDENT. = 0.13432 WITH T2GRP3 DEPENDENT.
PEARSON'S R = -0.10367 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21069

FILE PREPSTAPR (CREATION DATE = 02/10/86) 1983-84 PRE&1984-85 POST CTBS READING WITH 1984-85 APR

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *
TGRADE BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.

TGRADE	T2GRP3: COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
1	COUNT	64	357	205	626
	ROW PCT	10.2	57.0	32.7	1.4
	COL PCT	0.5	1.6	1.9	
	TOT PCT	0.1	0.8	0.4	
2	COUNT	1075	2318	1921	5314
	ROW PCT	20.2	43.6	36.1	11.5
	COL PCT	7.9	10.7	17.6	
	TOT PCT	2.3	5.0	4.1	
3	COUNT	1054	2314	1431	4799
	ROW PCT	22.0	48.2	29.8	10.4
	COL PCT	7.7	10.6	13.1	
	TOT PCT	2.3	5.0	3.1	
4	COUNT	1450	2054	1113	4617
	ROW PCT	31.4	44.5	24.1	10.0
	COL PCT	10.6	9.4	10.2	
	TOT PCT	3.1	4.4	2.4	
5	COUNT	1465	2008	1168	4641
	ROW PCT	31.6	43.3	25.2	10.0
	COL PCT	10.7	9.2	10.7	
	TOT PCT	3.2	4.3	2.5	
6	COUNT	943	2602	1043	4588
	ROW PCT	20.6	56.7	22.7	9.9
	COL PCT	6.9	12.0	9.6	
	TOT PCT	2.0	5.6	2.3	
7	COUNT	1674	2101	913	4688
	ROW PCT	35.7	44.8	19.5	10.1
	COL PCT	12.2	9.7	8.4	
	TOT PCT	3.6	4.5	2.0	
8	COUNT	1497	2191	881	4569
	ROW PCT	32.8	48.0	19.3	9.9
	COL PCT	10.9	10.1	8.1	
	TOT PCT	3.2	4.7	1.9	
COLUMN TOTAL		13684	21740	10910	46334
		29.5	46.9	23.5	100.0

(CONTINUED)

APPENDIX C (Continued)

* C R O S S T A B U L A T I O N O F *
TGRADE BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.
* PAGE 2 OF 2

TGRADE	T2GRP3 COUNT / ROW PCT / COL PCT / TOT PCT	LO 33%TILE GRP-C 1	MID.33%TILE GRP- 2	HI 33%TILE GRP-C 3	ROW TOTAL
9	COUNT	1077	1956	774	3807
	ROW PCT	28.3	51.4	20.3	8.2
	COL PCT	7.9	9.0	7.1	
	TOT PCT	2.3	4.2	1.7	
10	COUNT	1159	1519	598	3276
	ROW PCT	35.4	46.4	18.3	7.1
	COL PCT	8.5	7.0	5.5	
	TOT PCT	2.5	3.3	1.3	
11	COUNT	1351	1345	421	3117
	ROW PCT	43.3	43.2	13.5	6.7
	COL PCT	9.9	6.2	3.9	
	TOT PCT	2.9	2.9	0.9	
12	COUNT	875	975	442	2292
	ROW PCT	38.2	42.5	19.3	4.9
	COL PCT	6.4	4.5	4.1	
	TOT PCT	1.9	2.1	1.0	
COLUMN TOTAL		13604	21740	10910	46334
		29.5	46.9	23.5	100.0

RAW CHI SQUARE = 1765.41187 WITH 22 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.13803
CONTINGENCY COEFFICIENT = 0.19158
LAMBDA (ASYMMETRIC) = 0.02153 WITH TGRADE DEPENDENT. = 0.00024 WITH T2GRP3 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01355
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00791 WITH TGRADE DEPENDENT. = 0.01808 WITH T2GRP3 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01100
KENDALL'S TAU B = -0.12476. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.14230. SIGNIFICANCE = 0.0000
GAMMA = -0.16382
SOMERS'S D (ASYMMETRIC) = -0.14889 WITH TGRADE DEPENDENT. = -0.10454 WITH T2GRP3 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.12283
ETA = 0.15353 WITH TGRADE DEPENDENT. = 0.17660 WITH T2GRP3 DEPENDENT.
PEARSON'S R = -0.15322 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21069

APPENDIX C (Continued)

CROSSTABULATION OF CCLUSTER SCHOOL CLUSTER FOR CURRENT YEAR--1981-82 BY T2GRP3 IND.STUDENT PST.COMP.SCR.BASED 33% GRPS.

CCLUSTER	COUNT / ROW PCT / COL PCT / TOT PCT	T2GRP3 1 LO 33%TILE GRP-C	2 MED.33%TILE GRP-	3 HI 33%TILE GRP-C	ROW TOTAL
CELLINWOOD 01	1	805	1643	905	3353
		24.0	49.0	27.0	7.3
		5.9	7.6	8.3	
		1.7	3.6	2.0	
EAST 02	2	1905	2904	1342	6151
		31.0	47.2	21.8	13.4
		14.0	13.4	12.4	
		4.1	6.3	2.9	
ADAMS-RHODES 03	3	1879	3220	1592	6691
		28.1	48.1	23.8	14.5
		13.8	14.9	14.7	
		4.1	7.0	3.5	
KENNEDY-MARSHALL 04	4	1921	3910	2319	8150
		23.6	48.0	28.5	17.7
		14.1	18.1	21.4	
		4.2	8.5	5.0	
EAST TECH-SOUTH 05	5	2212	2769	1173	6154
		35.9	45.0	19.1	13.4
		16.3	12.8	10.8	
		4.8	6.0	2.5	
GLENVILLE-LINCLN 06	6	2115	3112	1416	6643
		31.8	46.8	21.3	14.4
		15.6	14.4	13.0	
		4.6	6.8	3.1	
WAY-WEST TECH 07	7	2762	4043	2110	8915
		31.0	45.4	23.7	19.4
		20.3	18.7	19.4	
		6.0	8.8	4.6	
	COLUMN TOTAL	13599 29.5	21601 46.9	10857 23.6	46057 100.0

RAW CHI SQUARE = 437.26271 WITH 12 DEGREES OF FREEDOM, SIGNIFICANCE = 0.0
CRAMER'S V = 0.06890
CONTINGENCY COEFFICIENT = 0.09698
LAMBDA (ASYMMETRIC) = 0.00563 WITH CCLUSTER DEPENDENT, = 0.0 WITH T2GRP3 DEPENDENT,
LAMBDA (SYMMETRIC) = 0.00339
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00250 WITH CCLUSTER DEPENDENT, = 0.00453 WITH T2GRP3 DEPENDENT,
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00322

APPENDIX C (Continued)

94-95 DISCREPANT READING STUDY--ANALYSIS BY JIM ZAPIKAU, PH.D.

KENDALL'S TAU B = -0.02904. SIGNIFICANCE = 0.0000

KENDALL'S TAU C = -0.03203. SIGNIFICANCE = 0.0000

GAMMA = -0.03948

SOMERS'S D (ASYMMETRIC) = -0.03351 WITH CCLUSTER DEPENDENT, = -0.02517 WITH T2GRP3 DEPENDENT,

SOMERS'S D (SYMMETRIC) = -0.02875

ETA = 0.03930 WITH CCLUSTER DEPENDENT, = 0.09511 WITH T2GRP3 DEPENDENT,

PEARSON'S R = -0.03537 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 21346

APPENDIX C (Continued)

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